STIC Search Report
EIC 2100

STIC Database Tracking Number: 166589

TO: Merilyn Nguyen **Location: RND 3C19** **Art Unit: 2163** **Thursday, September 29, 2005** **Case Serial Number: 09/675258**	**From: Emory Damron** **Location: EIC 2100** **RND 4B19** **Phone: 571-272-3520** **Emory.Damron@uspto.gov**

Search Notes

Dear Merilyn,

Please find below the Class 705 refocus of your search request.
References of potential pertinence have been tagged, but please review all the packets in case you like something I didn't.
Of those references which have been tagged, please note any manual highlighting which I've done within the document.
In addition to searching on Dialog, I also searched EPO/JPO/Derwent.
There may be a few decent references contained herein, but I'll let you determine how useful they may be to you.
Please contact me if I can refocus or expand any aspect of this case, and please take a moment to provide any feedback (on the form provided) so EIC 2100 may better serve your needs. Good Luck!

Sincerely,
Emory Damron
Technical Information Specialist
EIC 2100, US Patent & Trademark Office
Phone: (571) 272-3520
Emory.damron@uspto.gov

Refocus 705

Access DB# 166589

SEARCH REQUEST FORM

Scientific and Technical Information Center

105 SEPT

Requester's Full Name: Merilyn Nguyen Examiner #: 79389 Date: 09/22/05
Art Unit: 2163 Phone Number 571-272-4026 Serial Number: 09675258
Mail Box and Bldg/Room Location: RAN 3C19 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: System & Method for Tracking and Routing Shipped Items

Inventors (please provide full names): Morimoto, Nobuyoshi

Earliest Priority Filing Date: 09/28/2000

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Central server select less expensive routing using two or more different shipping companies and one more intermediate destinations,

Central server generate data file having intermediate destinations and final destination,

And storing this generated data file in a memory device attached to the item being shipped.

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STAFF USE ONLY Type of Search Vendors and cost where applicable

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Set     Items   Description
S1    7276110   CENTRAL? OR MAIN? OR PRIMARY? OR HEAD? OR CHIEF? OR MASTER?
           OR MANAG? OR CONTROL? OR SUPERVIS?
S2    1118220   SERVER? OR COMPUTER? OR WORKSTATION? OR (DATA OR MICRO)()P-
          ROCESSOR? OR CPU? ?
S3     240493   (LESS OR LEAST)()(EXPENSIV? OR COSTLY? OR MONEY?) OR ECONO-
          MICAL? OR OPTIMIZ? OR OPTIMIS?
S4     262353   CHEAPEST? OR MOST()CHEAP? OR BEST OR MOST()(DIRECT? OR LOG-
          ISTIC?) OR OPTIMUM OR COST()(EFFECTIVE? OR EFFICIENT? OR SAVI-
          NG?) OR BANG(3W)BUCK? OR MOST()INEXPENS? OR MINIMUM()(EXPENS?
          OR COST? ?)
S5    1996219   ROUTE? OR ROUTING? OR WAY? ? OR AVENUE? OR PATH? ? OR PASS-
          AGE? OR CORRIDOR? OR TRANSIT? OR ROAD? OR HIGHWAY? OR MAILROU-
          T?
S6    2727881   COURSE? OR PATHWAY? OR TRACK? OR CIRCUIT? ? OR LANE? OR SH-
          IPPINGLANE? OR SEAROUTE? OR AIRROUTE?
S7     981164   SHIPPER? OR SHIPPING? OR SENDER? OR SENDING? OR DISPATCHER?
           OR CARRIER? OR DISPATCHING? OR ORIGINAL? OR ORIGINAT? OR ORI-
          GIN? ? OR COMPANY? OR ENTIT?
S8       4099   (POSTAL OR PARCEL?)()SERVICE? OR DELIVERYMAN? OR DELIVERYM-
          EN? OR TRUCKER? OR TRUCKING? OR DISTRIBUTER? OR WHOLESALER?
S9     687371   INTERMEDIAT? OR MID OR MIDDLE OR MEDIAN OR MIDDLEMAN? OR M-
          IDDLEMEN?
S10     29169   INTERMEDIAR? OR (THIRD OR 3RD)()(PARTY? OR PARTIE?) OR PRO-
          XY? OR WAYSTATION? OR WAY()STATION? OR STOPOVER? OR STOP()OVE-
          R? OR LAYOVER? OR LAY()OVER? OR STAGING?()AREA?
S11   1042377   DESTINATION? OR STOP? ? OR STOPPING()POINT? OR ADDRESS? OR
          LOCATION? OR TERMINUS? OR LANDING()(PLACE? OR SPOT? ?)
S12   3538492   FINAL? OR END OR ENDPOINT? OR LAST? OR ULTIMAT? OR CONCLU?
          OR CULMINAT? OR RECEIVING? OR RECIPIENT?
S13   2258636   STORING? OR STORE? OR SAVE? OR SAVING? OR MEMOR? OR RAM? ?
          OR ROM? ?
S14   2784142   COPY? OR COPIE? OR WRITE? OR WRITING? OR WRITTEN?
S15   3283578   INFO? OR DATA? OR INFORMATION? OR FILE? OR FACT?
S16   1051698   STATISTIC? OR CONTENT? OR INSTRUCTION? OR MESSAG?
S17      1611   BILL?(2W)LADING? OR INVOIC?
S18   1650469   ATTACH? OR APPEND? OR ADHER? OR ACCOMPAN? OR AFFIX? OR RFI-
          D? OR SENSORMATIC? OR RADIO()FREQUEN?()(ID OR IDENTIF?)
S19     500662   FASTEN? OR ASSIGN? OR ADJOIN? OR ANNEX? OR TAG OR TAGGING?
          OR TAGGED?
S20     876806   ITEM? OR BOX?? OR PACKAG? OR PARCEL? ? OR FREIGHT? OR CARG-
          O?
S21   1151669   GOODS OR CARTON? OR MAIL? OR BUNDLE? OR ASSET? OR VALUABL?
          OR CONTAINER?
S22   3376832   SHIPPED? OR SENT? OR TRANSMI? OR DELIVER? OR TRANSPORT?
S23   1812945   IC=(G06F? OR H04K? OR H04L? OR G06G? OR G07B? OR B65B? OR -
          G01S? OR G01G? OR B07C?)
S24   2666397   MC=(T01? OR S02? OR W02? OR W01? OR S03? OR W06? OR X22? OR
           T05?)
S25      6972   S1 AND S2 AND S3:S4 AND S5:S6
S26         3   S25 AND S7:S8 AND S9:S10 AND S11 AND S12
S27       277   S25 AND (S13:S14 OR S18:S19) AND S15:S17 AND S20:S21
S28        12   S25 AND S1(5N)S2 AND S3:S4(5N)S5:S6 AND S11(5N)(S7:S8 OR S-
            9:S10 OR S12)
S29       218   S27 AND S23:S24
S30        15   S26 OR S28
S31    841287   PR=2001:2005
S32        13   S30 NOT S31
S33        13   IDPAT (sorted in duplicate/non-duplicate order)
S34       277   S27 OR S29
S35        67   S34 AND (S13:S14 OR S18:S19)(7N)S15:S17(7N)S20:S22
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S36         59   S35 NOT S30:S31
S37         59   IDPAT (sorted in duplicate/non-duplicate order)
File 347:JAPIO Nov 1976-2005/Apr(Updated 050801)
         (c) 2005 JPO & JAPIO
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200561
         (c) 2005  Thomson Derwent
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33/3,K/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014518971 **Image available**
WPI Acc No: 2002-339674/200237
XRPX Acc No: N02-267101

Computer **-implemented** centralized **system for optimally** routing **and** tracking **articles has global** computer server **with global database,** optimizer **and database of** route optimization **factors; and processing stations throughout delivery area**

Patent Assignee: COSITE.COM INC (COSI-N)
Inventor: AHMED N; AKLEPI A; CHERENKOV P V; KOUROPTEV E S; LEBEDEV V; MARMOL J R; MIAGKOV A V; NAGLI R
Number of Countries: 093 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200219046	A1	20020307	WO 2000US24225	A	20000831	200237 B
AU 200069500	A	20020313	AU 200069500	A	20000831	200249
			WO 2000US24225	A	20000831	

Priority Applications (No Type Date): WO 2000US24225 A 20000831
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200219046	A1	E	27	G05B-019/05	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW

AU 200069500	A		G05B-019/05	Based on patent WO 200219046

Computer **-implemented** centralized **system for optimally** routing **and** tracking **articles has global** computer server **with global database,** optimizer **and database of** route optimization **factors; and processing stations throughout delivery area**

Abstract (Basic):

... The system includes a global **computer server** accessible through an electronic communications network. The **server** includes a global database containing a record of **routing** and **tracking** information for each article handled by the system. An **optimizer** calculates and periodically recalculates an optimal **route** for each handled article. A database of **route optimization** factors is accessible by the **optimizer** . Processing stations are arrayed throughout a delivery area for the system...

...The system further includes a local **computer server** and one or more scanning devices at each processing station.

... INDEPENDENT CLAIMS are included for a **computer** -implemented method for delivering an article using a **centrally optimized tracking** and **routing** system...

...Optimally **routes** an article through network of processing, delivery and **routing** stations. Automatically detects when article has been misdirected and re-calculates optimal **routing** to correct destination without requiring article to backtrack' to **last** correct **stop** .

...

...The figure shows major components and connection of a **centralized**

package **routing** and **tracking** system
Title Terms: **COMPUTER** ;

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
7 March 2002 (07.03.2002)

PCT

(10) International Publication Number
WO 02/19046 A1

(51) International Patent Classification[7]: G05B 19/05, G06F 17/60

(21) International Application Number: PCT/US00/24225

(22) International Filing Date: 31 August 2000 (31.08.2000)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant: COSITE.COM, INC. [US/US]; 7000 W. Palmetto Park Road, Suite 305, Boca Raton, FL 33433 (US).

(72) Inventors: AKLEPI, Alex; 7375 S.W. 114 Street, Miami, FL 33156 (US). LEBEDEV, Vladimir; 500 Three Islands Boulevard, #715, Hallandale, FL 33009 (US). MARMOL, Johnny, R.; 15012 S.W. 104 Street, #2404, Miami, FL 33196 (US). NAGLI, Raphael; 3475 Country CL. Drive, #610, Aventura, FL 33180 (US). AHMED, Naveed; 431 W. Camino Real, #7, Boca Raton, FL 33432 (US). CHERENKOV, Pavel, V.; 16919 North Bay Road, #620, Sunny Isles Beach, FL 33160 (US). MIAGKOV, Andrey, V.; 2017 South Ocean Drive, Apt. No. 806, Hallandale, FL 33009 (US). KOUROPTEV, Eugene, S.; 250 174th Street, Miami, FL 33160 (US).

(74) Agent: FRIEDLAND, David, K.; Lott & Friedland, P.A., P.O. Drawer 141098, Coral Gables, FL 33114-1098 (US).

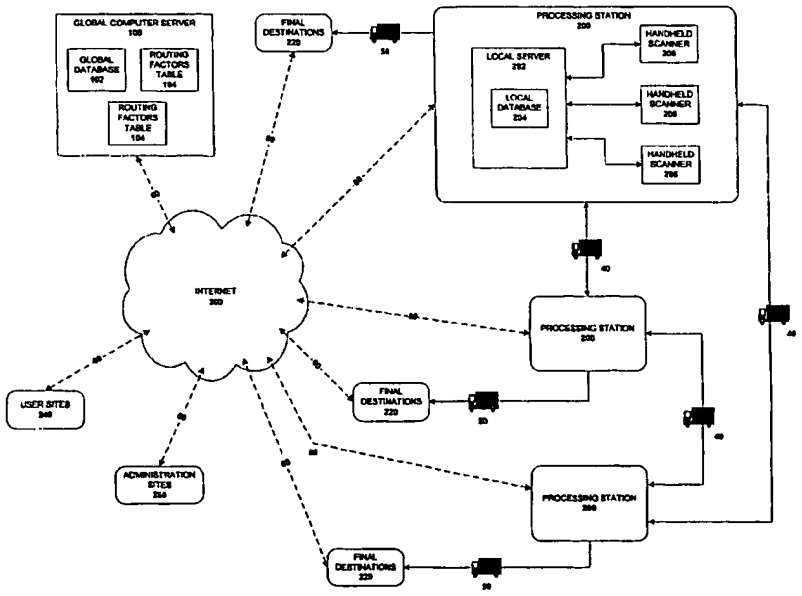
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CENTRALIZED SYSTEM AND METHOD FOR OPTIMALLY ROUTING AND TRACKING ARTICLES



(57) Abstract: A computer-implemented centralized article routing and tracking system and method for optimally routing an article through a network of processing stations. The system and method generate an optimal route based on variable factors such as weather, traffic, and available equipment and can re-calculate said route at every stop based on updated information. The system and method permits tracking of an article regardless of whether the article has been consolidated with other articles or not.

WO 02/19046 A1

What is claimed is:

1. A computer-implemented centralized system for optimally routing and tracking articles comprising:

a global computer server accessible through an electronic communications network, said global server comprising: a global database containing a record of routing and tracking information for each article handled by the system; an optimizer for calculating, and periodically re-calculating, an optimal route for each article handled by said system and for updating said global database with changes to said routing and tracking information; a database of route optimization factors accessible by said optimizer for use in said calculation and re-calculation of said optimal route; a tracker enabling users of said system to review said tracking and routing information and to modify said route optimization factor database,

a plurality of processing stations arrayed throughout a delivery area for said system,

at each such processing station, a local computer server capable of periodically receiving from said global computer server identification, handling and routing instructions for each article to be processed at said processing station and periodically transmitting to said global computer server information regarding all handling activities performed on articles processed at said processing station,

at each such processing station, one or more scanning devices capable of receiving from said local computer server article identification information, handling instructions and routing information, and also being capable of collecting identification and handling activity information for each article received at each said processing station

and transmitting said identification and handling activity information to said local computer server, and

transportation means capable of transporting articles between and among said processing stations, article origination points and article destination points.

2. A computer-implemented method for delivering an article using a centrally optimized tracking and routing system, the method comprising the steps of:

at a first processing station, using a first scanner to collect article identification data and final destination data from said article,

transmitting from said first scanner to a local computer server at said first processing station, said article identification data and final destination data along with scanning time and date data,

transmitting from said first processing station to a global computer server said article identification, time, date and final destination data, along with identification data for said first processing station,

at said global computer server, incorporating said data transmitted from said first processing station into an article record at a global article information database,

calculating an optimal route for transporting said article from said first processing stations to said final destination and updating said article record with identification information for the first stop along said optimal route,

transmitting from said global computer server to said local computer server said updated package record information,

transmitting said package record information to said first scanner or a second scanner at said processing station,

scanning said package with said first or second scanner and displaying said first stop identification information for said package,

transporting said package from said first processing station to said first stop,

if said first stop is not also said final destination, repeating the above steps at said next stop until said package is delivered at said final destination.

US006094642A

United States Patent [19]

Stephenson et al.

[11] Patent Number: 6,094,642

[45] Date of Patent: Jul. 25, 2000

[54] **INTEGRATED DATA COLLECTION AND TRANSMISSION SYSTEM AND METHOD OF TRACKING PACKAGE DATA**

[75] Inventors: **Winn Stephenson**, Memphis; **Bruce Lindow**; **Tracy Bailey**, both of Germantown; **Terence Hollahan**; **David Mundie**, both of Memphis, all of Tenn.

[73] Assignee: **Federal Express Corporation**, Memphis, Tenn.

[21] Appl. No.: **08/957,625**

[22] Filed: **Oct. 24, 1997**

[51] **Int. Cl.**[7] **G06F 17/60**

[52] **U.S. Cl.** **705/28**; 235/385; 235/435; 235/462; 340/825.54

[58] **Field of Search** 235/385, 435, 235/449, 454, 462, 468, 472; 340/825.54; 705/28

[56] **References Cited**

U.S. PATENT DOCUMENTS

5,671,362	9/1997	Cowe et al.	705/28
5,726,984	3/1998	Kubler et al.	370/349
5,790,536	8/1998	Mahany et al.	370/338
5,844,400	12/1998	Ramsier et al.	320/106

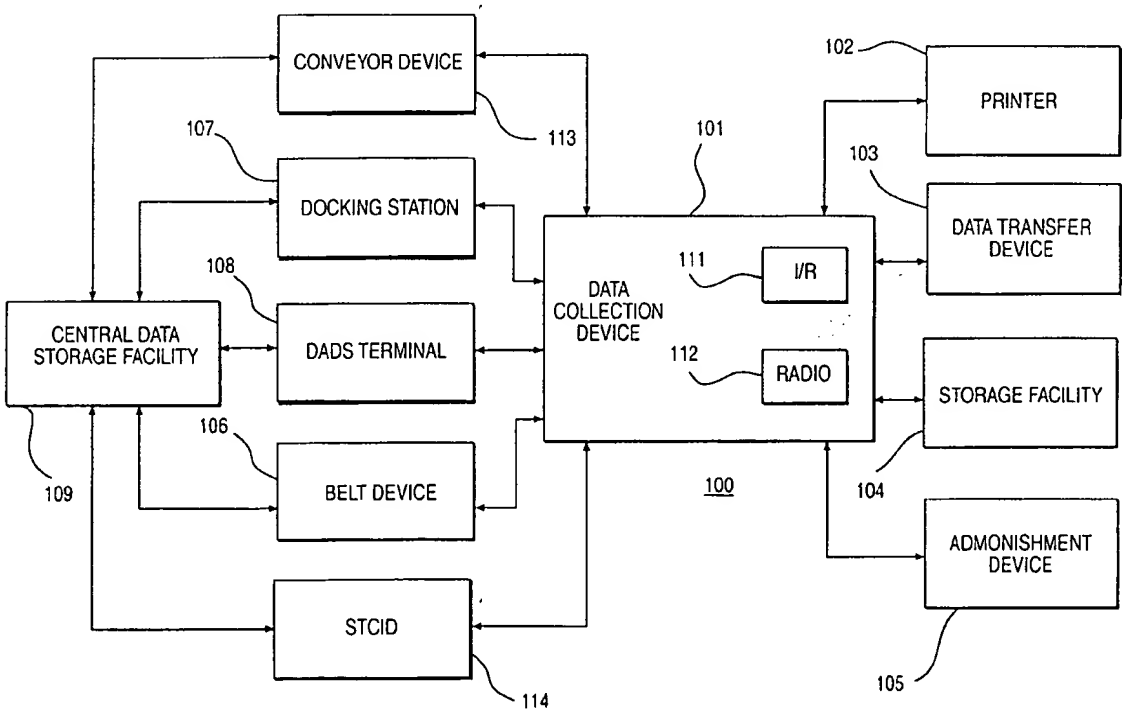
Primary Examiner—Edward R. Cosimano

Attorney, Agent, or Firm—Finnegan, Henderson, Farabow, Garrett & Dunner L.L.P.

[57] **ABSTRACT**

An integrated data collection and transmission system and method for collecting and transmitting data related to package delivery. The system and method utilize various components that are commonly connected via one or both of an infrared communications link and a microradio link.

43 Claims, 12 Drawing Sheets



US006047264A

United States Patent [19]

Fisher et al.

[11] Patent Number: 6,047,264

[45] Date of Patent: *Apr. 4, 2000

[54] METHOD FOR SUPPLYING AUTOMATIC STATUS UPDATES USING ELECTRONIC MAIL

[75] Inventors: Alan S. Fisher, Fremont; Samuel Jerrold Kaplan, Hillsborough, both of Calif.

[73] Assignee: Onsale, Inc., Menlo Park, Calif.

[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

[21] Appl. No.: 08/725,635

[22] Filed: Oct. 8, 1996

Related U.S. Application Data

[63] Continuation-in-part of application No. 08/695,095, Aug. 8, 1996, abandoned.

[51] Int. Cl.[7] G06F 15/21

[52] U.S. Cl. 705/26; 705/40; 705/27; 705/28; 705/29; 705/7; 705/8; 705/11

[58] Field of Search 705/26, 27, 28, 705/29, 7, 8, 11, 1

[56] References Cited

U.S. PATENT DOCUMENTS

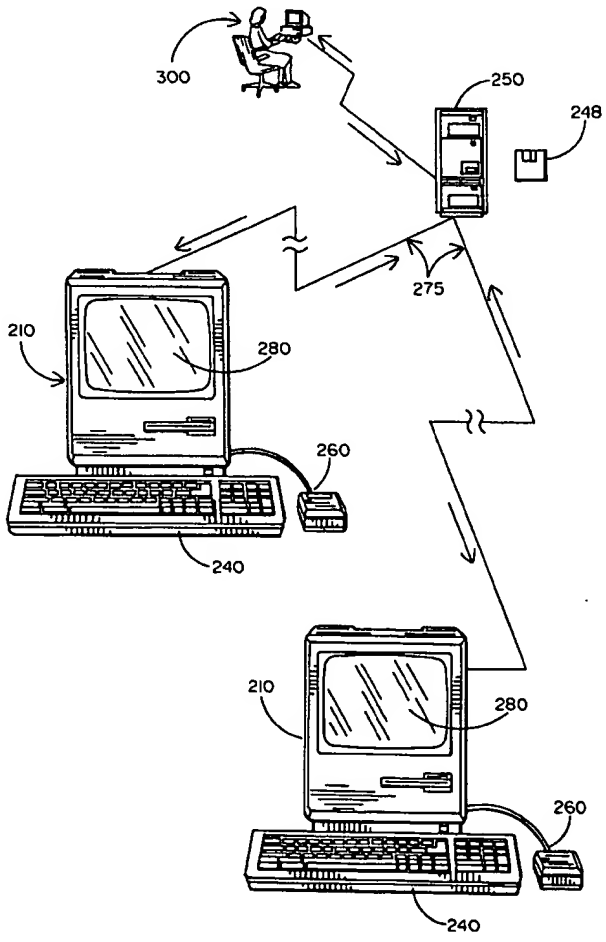
4,975,841 12/1990 Kehnemuyi et al. 705/32

Primary Examiner—Allen R. MacDonald
Assistant Examiner—Jagdish Patel
Attorney, Agent, or Firm—Adam H. Tachner; Crosby, Heafey, Roach & May

[57] ABSTRACT

A method is disclosed for automatically updating the status of customers' orders and shipments via electronic mail without using a human attendant to create and send the electronic mail messages. Preferably implemented in software, the updating method allows a large set of customers to be periodically updated over a computer or communications network via electronic mail. The method utilizes a database for maintaining order and shipping status and other relevant information.

14 Claims, 5 Drawing Sheets



US005869819A

United States Patent [19]

Knowles et al.

[11] Patent Number: 5,869,819

[45] Date of Patent: Feb. 9, 1999

[54] **INTERNET-BASED SYSTEM AND METHOD FOR TRACKING OBJECTS BEARING URL-ENCODED BAR CODE SYMBOLS**

[75] Inventors: **Carl Harry Knowles**, Morristown; **David Wilz**, Sewell, both of N.J.

[73] Assignee: **Metrologic Instuments Inc.**, Blackwood, N.J.

[21] Appl. No.: **838,501**

[22] Filed: **Apr. 7, 1997**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 820,540, Mar. 19, 1997, which is a continuation-in-part of Ser. No. 753,367, Nov. 25, 1996, which is a continuation-in-part of Ser. No. 645,331, Sep. 24, 1996, which is a continuation-in-part of Ser. No. 615,054, Mar. 12, 1996, which is a continuation-in-part of Ser. No. 573,946, Dec. 18, 1995, which is a continuation-in-part of Ser. No. 292,237, May 17, 1994, Pat. No. 5,808,285, which is a continuation-in-part of Ser. No. 365,193, Dec. 28, 1994, which is a continuation-in-part of Ser. No. 293,493, Aug. 19, 1994, Pat. No. 5,525,789, which is a continuation-in-part of Ser. No. 561,479, Nov. 20, 1995, Pat. No. 5,661,192, which is a continuation-in-part of Ser. No. 278,109, Nov. 24, 1995, Pat. No. 5,884,982, which is a continuation-in-part of Ser. No. 489,305, Jun. 19, 1995, abandoned, which is a continuation-in-part of Ser. No. 476,069, Jun. 7, 1995, Pat. No. 5,591,953, and Ser. No. 584,135, Jan. 11, 1996, Pat. No. 5,616,908.

[51] **Int. Cl.**[6] **G06K 07/10**

[52] **U.S. Cl.** **235/375**; 235/462

[58] **Field of Search** 235/462, 472, 235/454, 375, 380, 494, 384; 209/584, 900

[56] **References Cited**

U.S. PATENT DOCUMENTS

5,063,507	11/1991	Linsey et al.	364/408
5,313,052	5/1994	Watanabe et al.	235/375
5,387,783	2/1995	Mihm et al.	235/375
5,541,394	7/1996	Kouchi et al.	235/375
5,602,382	2/1997	Ulvr et al.	235/494
5,635,694	6/1997	Tuhro	235/375

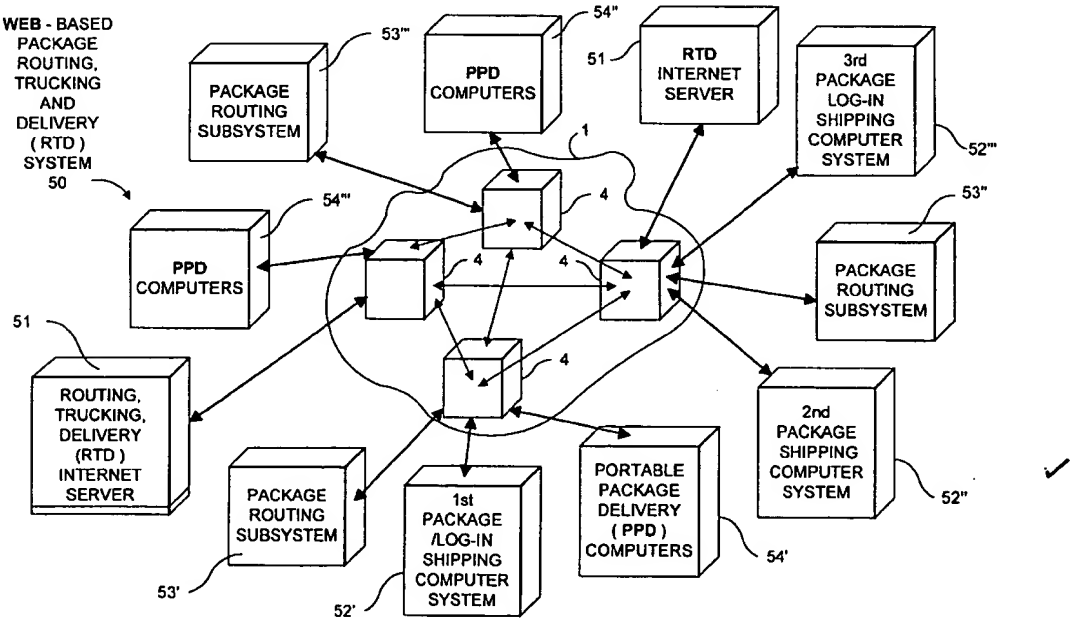
Primary Examiner—Thien Minh Le

Attorney, Agent, or Firm—Hopgood, Calimafde, Kalil & Judlowe, LLP

[57] **ABSTRACT**

A novel Web-based package routing, tracking and delivering system and method that uses URL/ZIP-CODE encoded bar code symbols on parcels and packages. The system comprises one or more Routing, Tracking and Delivery (RTD) Internet Server Subsystems connected to the Internet infrastructure and updated at any instant of time with package tracking information. A Package Log-In/Shipping Subsystem is located at each shipping location and connected to the RTD Internet Server by way of the Internet infrastructure. A Package Routing Subsystem is located at a hub station and connected to the RTD Internet Server by way of the Internet infrastructure. A Portable Package Delivery Subsystem is carried by each package delivery person, and connected to the RTD Internet Server by way of the Internet infrastructure communication link. At each remote hub station within the system, the URL/ZIP-CODE encoded bar code symbol is automatically scanned by way of the Internet infrastructure; the encoded destination Zip Code is locally recovered and used to route the package at the hub station; and the locally recovered URL is used to access the RTD Internet Server and update the location of the package within the system. The Portable Package Delivery Subsystem is used to read the URL/ZIP-CODE encoded bar code symbol near the delivery destination in order to access the RTD Internet Server and display delivery information and the like to facilitate the delivery process.

10 Claims, 15 Drawing Sheets



PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G08G 1/127, G01S 5/00	A1	(11) International Publication Number:	WO 99/33040
		(43) International Publication Date:	1 July 1999 (01.07.99)

(21) International Application Number: PCT/NO98/00386

(22) International Filing Date: 18 December 1998 (18.12.98)

(30) Priority Data:
19975999 19 December 1997 (19.12.97) NO

(71) Applicant *(for all designated States except US)*: TRANSPORTONLINE AS [NO/NO]; Boks 280, N–0614 Olso (NO).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: FJELLBERG, Espen [NO/NO]; Hellvik, N–1450 Nesoddtangen (NO). TORP, Stein [NO/NO]; Jotunveien 10, N–1405 Langhus (NO).

(74) Agent: TANDBERGS PATENTKONTOR AS; Boks 7085, N–0306 Oslo (NO).

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

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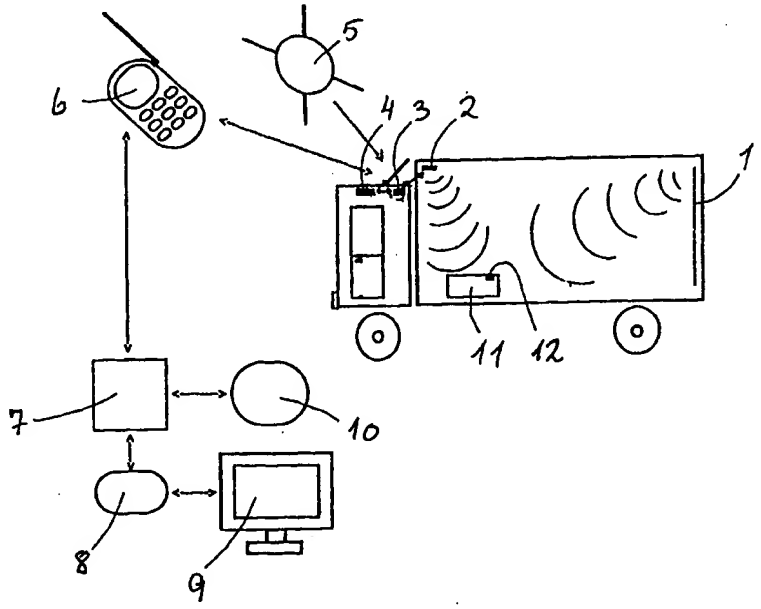
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: METHOD AND SYSTEM FOR SURVEILLANCE OF PORTABLE ARTICLES



(57) Abstract

Method and system for geographic surveillance and control of portable articles, such as goods, containers etc., thereby registrating articles being brought into or out of a transportation unit together with the information stored in a chip (12) secured to the article, and the geographical position of the transportation unit, to transmit the information through a global telecommunication network to a central processor, and to make the data stored in the central computer available for registered users from their personal computers through a global data network.

(12) UK Patent Application (19) GB (11) 2 332 540 (13) A

(43) Date of A Publication 23.06.1999

(21) Application No 9726740.5

(22) Date of Filing 18.12.1997

(51) INT CL[6]
G06F 17/60

(52) UK CL (Edition Q)
G4A AUXX

(56) Documents Cited
WO 97/08628 A1

(58) Field of Search
UK CL (Edition P) G4A AUXF AUXX
INT CL[6] G06F 17/60

(71) Applicant(s)
International Business Machines Corporation
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Armonk, New York 10504, United States of America

(72) Inventor(s)
Derrick John Byford

(74) Agent and/or Address for Service
C Boyce
IBM United Kingdom Limited, Intellectual Property
Department, Mail Point 110, Hursley Park,
WINCHESTER, Hampshire, SO21 2JN,
United Kingdom

(54) Abstract Title
A parcel trace system

(57) A system for tracing parcels handled by a service provider for a plurality of clients is disclosed. The system includes relay software 30 adapted to communicate with the clients across the Internet and with a server 60' database 20'. The server database stores parcel objects, each including a parcel identifier attribute and a parcel location attribute. The server database further stores a URL attribute for each client. A client database 80 stores parcel objects, each object corresponding to a parcel being handled for the client and including a parcel identifier and parcel location attribute. A client database controller 70 communicates with the relay software, and across a second network, possibly the Internet, with the client. The relay software is responsive to a change of state of the parcel location attribute to signal it to the client database controller across the Internet. The client database controller responds to receipt of the change in state of parcel location to write it to the client database. The client database controller is further responsive to parcel location requests from the client across the second network to return a location and a parcel identifier for any parcel location requested by the client.

The delivery service company, in effect, echoes its tracking of the parcel directly onto the client's webpage.All the parcels belonging to a given client appear on the same page thus saving the time which would be taken to access different supplier systems and to enter codes individually for each parcel.

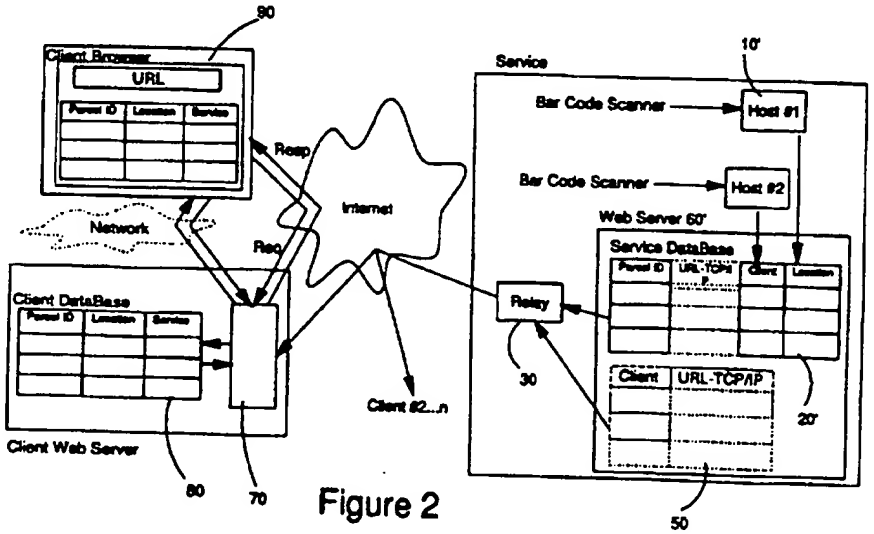


Figure 2

GB 2 332 540 A

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : G06F 17/60 | A2

(11) International Publication Number: WO 00/46728

(43) International Publication Date: 10 August 2000 (10.08.00)

(21) International Application Number: PCT/US00/03200

(22) International Filing Date: 7 February 2000 (07.02.00)

(30) Priority Data:
60/119,189 8 February 1999 (08.02.99) US

(71) Applicant: UNITED PARCEL SERVICE OF AMERICA, INC. [US/US]; 55 Glenlake Parkway, Northeast, Atlanta, GA 30328 (US).

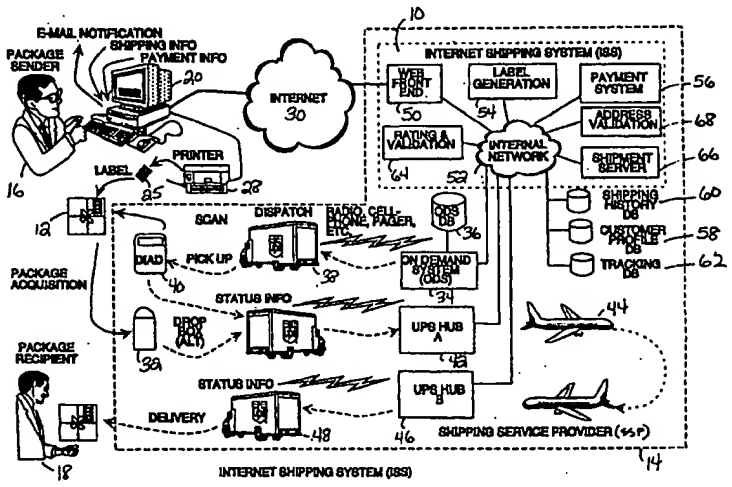
(72) Inventors: CREASY, Anthony, G.; 6315 Zinfandel Drive, Suwanee, GA 30024 (US). STADELE, Kurt, L.; 320 Aurelia Trace, Alpharetta, GA 30004 (US). HILBUSH, Mark, R.; 1410 Ridge Road, Baltimore, MD 21228 (US). DEVENEY, JamesSNEERINGER, Jane; 201 Montrose Avenue, Baltimore, MD 21228 (US). ORF, GregoryMICHEL, David; 11 Murdock Road, Baltimore, MD 21228 (US). SCHENKEN, Christopher, T.; 6330 Maid Marion Close, Alpharetta, GA 30202 (US). GEPHART, Robert; 1655 Fleming Place, York, PA (US). PHILLIPS, DebbieYANIKOV, John; 241 Edinburgh Road, York, PA (US). WIGHT, Lawrence; 1909 Mt. Carmel Road, Parkton, MD (US). MINAHAN, Diane; 959 Breakwater Drive, Annapolis, MD (US). RASHBAUM, Diane, Lynn, T.; 7815 Appaloosa Trail, Gainesville, GA 30506 (US). YEUNG, SteveDORRIS, ThomasTROWBRIDGE, Mark (deceased).

(74) Agents: YOUNG, Jeffrey, E. et al.; Jones & Askew, LLP, 2400 Monarch Tower, 3424 Peachtree Road, N.E., Atlanta, GA 30326 (US).

(81) Designated States: CA, JP, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
Without international search report and to be republished upon receipt of that report.

(54) Title: INTERNET PACKAGE SHIPPING SYSTEMS AND METHODS



(57) Abstract

A system and methods for shipping a package (12) from a package sender (16) to an intended recipient (18), utilizing Internet communications (30) to place shipping orders, request on demand package pickup, maintain and utilize pre–stored profile information, view shipping history, track orders, etc. A package sender (16) with an Internet–accessible computer (20) accesses an Internet site and associated shipping system (10) operated by a shipping service provider (14). The package sender (16) enters information required for shipping the package (12), including shipping options and methods for payment. The options and payment for the shipment transaction are validated. If the transaction is validated, printer indicia are communicated to the customer's computer (20), which is enabled to locally print a prepaid label (25) containing special machine–readable (876) as well as human–readable indicia (904). The shipping service provider (14) acquires the package by drop–off, standard pickup or on call pickup, scans the machine readable indicia, verifies other indicia of authenticity, and processes the package (12) in accordance with information encoded on the label.

US006220509B1

(12) **United States Patent**
Byford

(10) **Patent No.: US 6,220,509 B1**
(45) **Date of Patent: Apr. 24, 2001**

(54) **PARCEL TRACE SYSTEM**

(75) Inventor: **Derrick John Byford**, London (GB)

(73) Assignee: **International Business Machines, Corporation**, Armonk, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/113,806**

(22) Filed: **Jul. 9, 1998**

(30) **Foreign Application Priority Data**

Dec. 18, 1997 (GB) 9726740

(51) **Int. Cl.**[7] **G06F 17/00**
(52) **U.S. Cl.** **235/375**; 705/1
(58) **Field of Search** 705/1, 26; 235/375; 707/1, 10

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,631,827	*	5/1997	Nicholls et al.	395/228
5,804,803	*	9/1998	Cragun et al.	235/375
5,869,819	*	2/1999	Knowles et al.	235/375
5,970,472	*	10/1999	Allsop et al.	705/26
6,047,053	*	4/2000	Miner et al.	379/201
6,047,264	*	4/2000	Fisher et al.	705/26
6,070,793	*	6/2000	Reichl et al.	235/375

FOREIGN PATENT DOCUMENTS

WO 97/08628 A1 6/1997 (WO) .

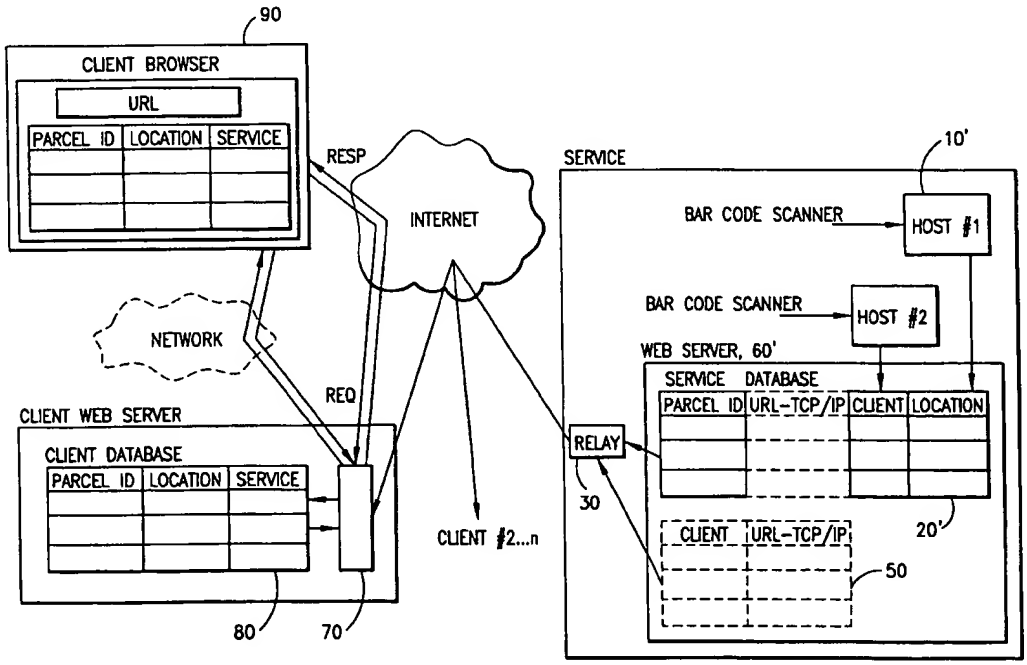
* cited by examiner

Primary Examiner—Michael G. Lee
Assistant Examiner—Jamara A. Franklin
(74) *Attorney, Agent, or Firm*—David M. Shofi; Anne Vachon Dougherty

(57) **ABSTRACT**

A parcel trace system for tracing parcels handled by a service provider for a plurality of clients. The system includes relay **(30)** adapted to communicate with the clients across the Internet and with a server database. The server database stores a plurality of parcel objects, each parcel object including a parcel identifier attribute and a parcel location attribute. The server database further includes a URL attribute for each client. A client database **(80)** includes a plurality of parcel objects, each object corresponding to a parcel being handled for the client and including a parcel identifier and a parcel location attribute. A client database controller **(70)** communicates with the relay, and across a second network, possibly the Internet with the client. The relay is responsive to a change in state of the parcel location attribute to relay the change in state of the parcel location attribute to the client database controller across the Internet. The client database controller responds to receipt of the change in state of parcel location to write the change of state to the client database. The client database controller is further responsive to parcel location requests from the client across the second network to return a location and a parcel identifier for any parcels requested by the client.

10 Claims, 2 Drawing Sheets



33/3,K/11 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011251635 **Image available**
WPI Acc No: 1997-229538/199721
XRPX Acc No: N97-189755

Computer **-supported vehicle guidance method - involves determining** optimum route **as function of starting data, traffic situation data and stored** road **network data in form of sequences of** intermediate destinations **for reproducing corresponding successive sections of** optimum route

Patent Assignee: DAIMLER-BENZ AG (DAIM); DAIMLERCHRYSLER AG (DAIM); MERCEDES-BENZ AG (DAIM)
Inventor: SCHUESSLER R; SCHUSSLER R
Number of Countries: 006 Number of Patents: 008
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
GB 2306738	A	19970507	GB 9621911	A	19961021	199721	B
DE 19539641	A1	19970430	DE 1039641	A	19951025	199723	
FR 2740594	A1	19970430	FR 9612820	A	19961022	199725	
GB 2306738	B	19970917	GB 9621911	A	19961021	199740	
JP 9223296	A	19970826	JP 96314076	A	19961022	199744	
US 5818356	A	19981006	US 96735985	A	19961025	199847	
DE 19539641	C2	20000217	DE 1039641	A	19951025	200013	
IT 1286355	B	19980708	IT 96RM722	A	19961023	200044	

Priority Applications (No Type Date): DE 1039641 A 19951025
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2306738	A		25	G08G-001/0968	
DE 19539641	A1		8	G08G-001/09	
FR 2740594	A1			G08G-001/097	
GB 2306738	B			G08G-001/0968	
JP 9223296	A		9	G08G-001/123	
US 5818356	A			G08G-001/123	
DE 19539641	C2			G08G-001/09	
IT 1286355	B			G08G-000/00	

navigation

Computer **-supported vehicle guidance method...**

...**involves determining** optimum route **as function of starting data, traffic situation data and stored** road **network data in form of sequences of** intermediate destinations **for reproducing corresponding successive sections of** optimum route

...Abstract (Basic): data containing information about starting location S, destination Z, type of navigator and type of **road** network memory, to a **control** centre **computer** which determines an **optimum route** R2 as a function of starting data, traffic situation data and stored network data. The **control** centre **computer** determines the minimum quantity of actual **intermediate destinations** Zz1, Zz2 on the **optimum route** R2 which are required for a section-by-section, unambiguous reproduction of the **route** R2, by a vehicle-end navigation **computer** using standard **route** search procedures, carried out independently of the traffic situation, between every two successive **intermediate destinations** S, Zz1, Zz2, Z. The data of the actual **intermediate locations** Zz1, Zz2, which implicitly contains the information for by-passing possible traffic problems between the starting location S and the destination Z, is transmitted to the

vehicle-end navigation **computer** .
...

...The navigation **computer** determines the most favourable **route** by reproducing successive sections W1, W2, ... of the optimum route R2 by means of a traffic situation-independent **route** search method. The navigator **computer** generates the optical and/or audible guidance instructions associated with the respective **route** sections and outputs them for the driver of the vehicle. After the sections W1, W2, ... of the **optimum route** R2 have been determined, the navigation **computer** evaluates the navigator status data and detects the possible presence of a current, new guidance request on the part of the navigator, the **control** centre or the driver of the vehicle...

...ADVANTAGE - Permits traffic situation-dependent vehicle guidance in which more costly **route optimization** tasks are performed by **control** centre **computer** so that vehicle-end navigation **computer** only has to carry out traffic situation-independent **route** finding tasks. Dividing up of guidance tasks between **control** centre and vehicle-end navigation **computer** keeps outlay on data transmission to minimum and utilizes navigation **computers** accommodated at vehicle-end efficiently, without burdening navigation **computers** with traffic situation-dependent **route - optimization** tasks

...Abstract (Equivalent): which method - traffic situation data used for guiding the vehicle are made available in a **control** centre and used to determine **optimum routes** , including the following steps: - the transmission of necessary vehicle-specific starting data to the **control** centre, - the determination of an **optimum route** as a function of the starting data, the traffic situation data and stored **road** network data and the determination of **intermediate destinations** located on the **optimum route** , by means of a **computer** in the **control** centre such that each section of the **optimum route** located between every two successive **intermediate destinations** can be reproduced unambiguously by a vehicle-end navigation device by means of a traffic situation-independent **route** search method, - the transmission of the **intermediate destination** data from the **control** centre to the vehicle-end navigation device, and - the successive determination of the successive sections of the **optimum route** between every two successive **intermediate destinations** by means of the traffic situation-independent **route** search method with a respective **intermediate destination** as the starting point and a subsequent **intermediate destination** as the **end** point of the respective **route** section and the generation of associated guidance instruction by the vehicle-end navigation device...

Title Terms: **COMPUTER** ;

37/3,K/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011490104 **Image available**
WPI Acc No: 1997-468009/199743
XRPX Acc No: N97-390406
Container **conveyance display device used in government offices, NGO - makes use of communication part which transmits current position of selected** container **and conveyance system to** computer **terminal**
Patent Assignee: SYSTEM INTEGRATION KK (SYST-N)
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 9218999	A	19970819	JP 9646871	A	19960209	199743 B
JP 3692175	B2	20050907	JP 9646871	A	19960209	200558

Priority Applications (No Type Date): JP 9646871 A 19960209
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 9218999	A		4	G08G-001/0969	
JP 3692175	B2		6	G08G-001/0969	Previous Publ. patent JP 9218999

Container **conveyance display device used in government offices, NGO...**
...makes use of communication part which transmits current position of selected container **and conveyance system to** computer **terminal**

...Abstract (Basic): The display unit has a first **management** unit which **stores** the storage situation of the **container** equipped with an equipment and the relief **items** necessary in the case of urgency. A second management part **stores** the situation of a **container** conveyance part. A map **information management** part and a conveyance **routing** part are included. The conveyance **routing** part selects the **optimum** conveyance system for conveying the **container** to the disaster place and the map **information management** part selects the **optimum** conveyance **route** .
...

...The current position of the selected **container** and conveyance system transmitted to a **computer** terminal through a communication unit
Title Terms: **CONTAINER** ;
Manual Codes (EPI/S-X): **T01-J05A2**

37/3,K/4 **(Item 4 from file: 347)**
DIALOG(R)File 347:JAPIO

05604199 **Image available**
CONTAINER CONVEYANCE INSTRUCTING DEVICE FOR EMERGENCY

PUB. NO.: 09-218999 [JP 9218999 A]
PUBLISHED: August 19, 1997 (19970819)
INVENTOR(s): TAKI YOSHIHIKO
APPLICANT(s): SYST INTEGUREESHIYON KK [000000] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 08-046871 [JP 9646871]
FILED: February 09, 1996 (19960209)

SAME PATENT, DIFFERENT ENGLISH TRANSLATION OF ABSTRACT

CONTAINER CONVEYANCE INSTRUCTING DEVICE FOR EMERGENCY

ABSTRACT

PROBLEM TO BE SOLVED: To speedily convey facilities or relief **goods** required in case of emergency to the disaster-stricken area...

...SOLUTION: A **container** conveyance instructing device for emergency is provided with a **computer** 2 having a **container managing** means for **storing** the preservation conditions of **containers** 3 equipped with facilities or relief **goods** required in case of emergency, conveyance organization **managing** means for **storing** the preservation conditions of **container** conveying means, map **information managing** means, conveyance **route** instructing means and communication means. When any disaster is generated, the conveyance **route** instructing means selects the required **containers** 3 out of the **container managing** means based on the disaster stricken conditions, selects any conveyance organization **optimum** for conveying the **containers** 3 to the disaster-stricken area out of the conveyance organization **managing** means and further selects any **optimum** conveyance **route** out of the map **information managing** means based on the selected **containers** and the current position of the conveyance organization. The **contents** instructed from the conveyance **route** instructing means are transmitted through the communication means to **computer** terminal equipment provided at the conveyance organization.

X

37/3,K/46 (Item 46 from file: 350)
DIALOG(R)File 350:Derwent WPIX

008879797 **Image available**
WPI Acc No: 1992-007068/199201
XRPX Acc No: N92-005460
Optimising mail **delivery systems by logistics planning - using network interconnecting batch** mailer ,, data **centre service to handle** mail **efficiently using** computer database
Patent Assignee: PITNEY BOWES INC (PITB)
Inventor: SANSOR R P; SCHUMACHER K H
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5072401	A	19911210	US 89416737	A	19891003	199201	B

Priority Applications (No Type Date): US 89416737 A 19891003

Optimising mail **delivery systems by logistics planning...**

...**using network interconnecting batch** mailer ,, data **centre service to handle** mail **efficiently using** computer database

...Abstract (Basic): A network is established interconnecting batch **mailers** , a **data** centre, and the postal service. **Mail data** on the **mail** batches is transmitted to the **data** centre. This enables the **data** centre to generate **data** to the **mailers** for merging **mail** batches to achieve additional postage discounts, to schedule and **route mail** carriers external to and within the postal system to increase efficiency of handling, and to interact with the postal service for logistics planning and drop-off point and timing of **mail** batches to expedite processing...

...The communications link includes **computers** at the **mailer** stations and at the **data** centre. Via the communications link, the **data** centre receives from each of the **mailer** stations the **mail** parameters of each batch of **mail** that has been or will be generated for early delivery to the postal service. The **data** centre **computer maintains** a **data** base with up-to-date, current **information** on all published postal service regulations governing qualification of batch **mailings** for rate reductions or discounts. The individual batch parameters are also **stored** in a **database** at the **data** centre...

...USE - **Optimising mail** delivery of batch **mail** . (21pp Dwg.No.4A/8)
Title Terms: **OPTIMUM** ;
International Patent Class (Additional): **G06F-015/21**
Manual Codes (EPI/S-X): **T01-J05A1** ...

... **T01-J05A2** ...

... **T01-J05B4**

37/3,K/53 (Item 53 from file: 347)
DIALOG(R)File 347:JAPIO

04868397 **Image available**
SELECTING DEVICE FOR **OPTIMUM** TRANSPORTATION **ROUTE**

PUB. NO.: 07-160997 [JP 7160997 A]
PUBLISHED: June 23, 1995 (19950623)
INVENTOR(s): TANAKA YOSHITAKA
TAKASUGI MASARU
APPLICANT(s): JAPAN SYNTHETIC RUBBER CO LTD [000417] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 05-302958 [JP 93302958]
FILED: December 02, 1993 (19931202)

SELECTING DEVICE FOR **OPTIMUM** TRANSPORTATION **ROUTE**

INTL CLASS: G08G-001/0969; **G06F-017/00** ; **G06F-017/30** ; G09B-029/10; **G06F-009/44**
...JAPIO CLASS: **Control** & Regulation); 30.2 (MISCELLANEOUS **GOODS** -- ...

...Sports & Recreation); 45.1 (**INFORMATION** PROCESSING...
...Arithmetic Sequence Units); 45.4 (**INFORMATION** PROCESSING...

... **Computer** Applications)

ABSTRACT
PURPOSE: To reduce the time required for **optimum** transportation **route** selection processing by using a lower hierachical map used to obtain an area name on...

... to reduce the number of times of referencing the map used for drawing a transportation **route** .

...

...code representing a start point and an area code representing an arrived point to a **CPU** 10 by a key board 13 and **stores** them to a work **memory** 12. The **CPU** 10 uses the area code representing the start point as a key word to retrieve a detailed map of a **file** storage device 14 to extract **data** corresponding to the area code of the start point. Furthermore, the **CPU** 10 references a detailed map and acquires an area code of a nearby major point as to the arrived point and registers the code to major map **information** in addition to the work **memory** 12, draws a candidate **route** of the **optimum transportation route** and calculates the distance. Then candidate **routes** are compared in distance and a candidate **route** with a minimum distance is detected (retrieved) and the result is printed out by a

33/3,K/10 (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011555804 **Image available**
WPI Acc No: 1997-532285/199749
XRPX Acc No: N97-443444
Conveying path set-up method for distribution system - by selecting conveying path to be used from several path data stored in memory of computer based on specified conveying device having previously transported its load to destination
Patent Assignee: TOYODA AUTOMATIC LOOM WORKS (TOYX)
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 9255114	A	19970930	JP 9668461	A	19960325	199749	B
JP 3663726	B2	20050622	JP 9668461	A	19960325	200541	

Priority Applications (No Type Date): JP 9668461 A 19960325
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 9255114	A		10	B65G-001/137	
JP 3663726	B2		14	B65G-001/137	Previous Publ. patent JP 9255114

Conveying path set-up method for distribution system...
...by selecting conveying path to be used from several path data stored in memory of computer based on specified conveying device having previously transported its load to destination

...Abstract (Basic): The method involves storing conveying **path** data containing information pertaining to conveying **origin** and **destination** in a memory (16) of **computer** (13) beforehand...

...A conveying **path** to be used is selected from the several **path** data stored in memory based on a specified conveying device (4a-4c) having previously transported...

...Provides flexible alteration of conveying device configuration and system operation since two or more conveying **path** is provided. Uses same **control** signal sent to conveying device **controller** by **computer** for different configurations of conveying device. Prevents reduction in conveying efficiency of system in case...

...is one conveying device that cannot be used by reducing time for outputting signal to **controller** of usable conveying device. Conveys load in **best** conveying **path** corresponding to situation since . Facilitates alteration of conveying **path** data since **path** data stored in memory can be updated if conveying device is added to or removed...
...Title Terms: **PATH** ;

Conveying path stored in a memory

33/3,K/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

THIS APPLICATION

014822487 **Image available**
WPI Acc No: 2002-643193/200269
XRPX Acc No: N02-508507

Apparatus to track **and** route **shipped goods, has memory device attached to goods containers stored in** shipping carrier **with** computer **access to** track **and** route carrier

Patent Assignee: COLONDOT.COM (COLO-N); NIHON DOT.COM CO LTD (NIDO-N)
Inventor: MORIMOTO N
Number of Countries: 096 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200226566	A2	20020404	WO 2001IB2344	A	20010928	200269	B
AU 200218445	A	20020408	AU 200218445	A	20010928	200310	
EP 1324923	A2	20030709	EP 2001985688	A	20010928	200345	
			WO 2001IB2344	A	20010928		

Priority Applications (No Type Date): US 2000675264 A 20000928; US 2000675258 A 20000928
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200226566	A2	E	42	B65D-000/00	
AU 200218445	A			B65D-000/00	Based on patent WO 200226566
EP 1324923	A2	E		B65D-001/00	Based on patent WO 200226566

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

Apparatus to track **and** route **shipped goods, has memory device attached to goods containers stored in** shipping carrier **with** computer **access to** track **and** route carrier

Abstract (Basic):

... Rigid frame **carrier** (30) with cover stores goods containers (40A-N). **Carrier** has attached memory (60) e.g. for **carrier** identification number, **final destination** information and containers have memory (50A-N) for **origination** information, **intermediate** and **final destination** information of container.

... Rigid frame **carrier** (30) stores goods containers (40A-N) and has memory (60) e.g. for **carrier** identification number, **final destination** information. Containers have memory (50A-N) for **origination** information, **intermediate** and **final destination** information of container. Regional **shipping company** routinely ships standard **carrier** (30) and containers (40) on certain **routes** . Information about goods is transmitted to **central server** which requests quote for **shipping** costs to determine **best** deal and **maintains** database of status of goods being shipped. At **intermediate destination** , **routing** information is read and most efficient **route** is determined...

...DEPENDENT CLAIMS included for **carrier** for **shipping** items, method ...or **shipping** goods and **computer** program...

...For **tracking** and **routing** shipped or mailed goods, to decrease **shipping** costs for Internet commerce...

...Can determine where package is by accessing **central** **server** 's data files...

...Container and **carrier** system for transporting goods...
... **Carrier** (30...

...Memory attached to **carrier** (60
...Title Terms: **TRACK** ;

```
Set     Items   Description
S1   12050707   SERVER? OR COMPUTER? OR WORKSTATION? OR DATAPROCESSOR? OR -
           MICROPROCESSOR?
S2     291667   (DATA OR MICRO OR CENTRAL)()PROCESSOR? OR CPU? ?
S3    3305538   (LESS OR LEAST)()(EXPENSIV? OR COSTLY? OR MONEY?) OR ECONO-
           MICAL? OR OPTIMIZ? OR OPTIMIS?
S4   10915524   CHEAPEST? OR MOST()CHEAP? OR BEST OR MOST()(DIRECT? OR LOG-
           ISTIC?) OR OPTIMUM OR COST?()(EFFECTIVE? OR EFFICIENT? OR SAV-
           ING?)
S5      82668   BANG(3W)BUCK? OR MOST()INEXPENS? OR MINIM?()(EXPENS? OR CO-
           ST? ?)
S6   20488025   ROUTE? OR ROUTING? OR WAY? ? OR AVENUE? OR PATH? ? OR PASS-
           AGE? OR CORRIDOR? OR TRANSIT? OR ROAD? OR HIGHWAY? OR MAILROU-
           T?
S7    9782270   COURSE? OR PATHWAY? OR TRACK? OR CIRCUIT? ? OR LANE? OR SH-
           IPPINGLANE? OR SEAROUTE? OR AIRROUTE?
S8     311169   S1:S2 AND S3:S5(7N)S6:S7
S9     256616   SHIPPER? OR SHIPPING? OR SENDER? OR SENDING? OR DISPATCHER?
            OR CARRIER? OR DISPATCHING? OR ORIGINAL? OR ORIGINAT? OR ORI-
           GIN? ? OR COMPANY? OR ENTIT?
S10      9977   (POSTAL OR PARCEL?)()SERVICE? OR DELIVERYMAN? OR DELIVERYM-
           EN? OR TRUCKER? OR TRUCKING? OR DISTRIBUTER? OR WHOLESALER?
S11     53964   INTERMEDIAT? OR MID OR MIDDLE OR MEDIAN OR MIDDLEMAN? OR M-
           IDDLEMEN?
S12     31414   INTERMEDIAR? OR (THIRD OR 3RD)()(PARTY? OR PARTIE?) OR PRO-
           XY? OR WAYSTATION? OR WAY()STATION? OR STOPOVER?
S13       618   STOP()OVER? OR LAYOVER? OR LAY()OVER? OR STAGING?()AREA? OR
            GOBETWEEN? OR GO()BETWEEN?
S14    138353   DESTINATION? OR STOP? ? OR STOPPING()POINT? OR ADDRESS? OR
           LOCATION? OR TERMINUS? OR LANDING()(PLACE? OR SPOT? ?)
S15    206851   FINAL? OR END OR ENDPOINT? OR LAST? OR ULTIMAT? OR CONCLU?
           OR CULMINAT? OR RECEIVING? OR RECIPIENT?
S16    153649   STORING? OR STORE? OR SAVE? OR SAVING? OR MEMOR? OR RAM? ?
           OR ROM? ?
S17    117125   COPY? OR COPIE? OR WRITE? OR WRITING? OR WRITTEN?
S18    282859   INFO? OR DATA? OR INFORMATION? OR FILE? OR FACT?
S19    116419   STATISTIC? OR CONTENT? OR INSTRUCTION? OR MESSAG?
S20     37379   BILL?(2W)LADING? OR INVOIC? OR DIRECTION?
S21     39008   ATTACH? OR APPEND? OR ADHER? OR ACCOMPAN? OR AFFIX? OR RFI-
           D? OR SENSORMATIC? OR RADIO()FREQUEN?()(ID OR IDENTIF?)
S22     41348   FASTEN? OR ASSIGN? OR ADJOIN? OR ANNEX? OR TAG OR TAGGING?
           OR TAGGED? OR ONBOARD? OR ON()BOARD?
S23    113583   ITEM? OR BOX?? OR PACKAG? OR PARCEL? ? OR FREIGHT? OR CARG-
           O?
S24    138666   GOODS OR CARTON? OR MAIL? OR BUNDLE? OR ASSET? OR VALUABL?
           OR CONTAINER?
S25     33923   S8 AND S9:S10 AND S11:S13 AND S14 AND S15
S26     10535   S8 AND (S16:S17 OR S21:S22)(7N)S18:S20(7N)S23:S24
S27      2412   S25 AND S26
S28       801   S27 AND (S9:S10 OR S11:S13 OR S15)(7N)S14
S29      1567   S27 AND (S16:S17 AND S21:S22)(10N)S23:S24
S30       577   S28 AND S29
S31       387   S30 AND PY<2001
S32       315   RD (unique items)
S33      1267   S29 AND (S16:S17 AND S21:S22)(5N)S23:S24 AND (S16:S17 OR S-
           21:S22 OR S23:S24)(5N)S18:S20
S34       584   S33 AND (S9:S10 OR S11:S13 OR S15)(10N)S14
S35        87   S34 NOT S30
S36        61   S35 AND PY<2001
S37        47   RD (unique items)
```

File 9:Business & Industry(R) Jul/1994-2005/Sep 28
(c) 2005 The Gale Group
File 15:ABI/Inform(R) 1971-2005/Sep 29
(c) 2005 ProQuest Info&Learning
File 16:Gale Group PROMT(R) 1990-2005/Sep 28
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File 20:Dialog Global Reporter 1997-2005/Sep 29
(c) 2005 Dialog
File 148:Gale Group Trade & Industry DB 1976-2005/Sep 29
(c)2005 The Gale Group
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(c) 1999 The Gale Group
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(c) 1999 Business Wire
File 813:PR Newswire 1987-1999/Apr 30
(c) 1999 PR Newswire Association Inc

32/3,K/140 (Item 25 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

09916194 SUPPLIER NUMBER: 19908061 (USE FORMAT 7 OR 9 FOR FULL TEXT)
How smart is your fleet? New technology pushes fleets into the 21st century.(including related story on routing software)
Harrington, Lisa H.
Transportation & Distribution, v38, n8, p35(5)
August, 1997
ISSN: 0895-8548 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 3074 LINE COUNT: 00262

...ABSTRACT: way they operate. Such fleet management technology like communications tools and, tracking systems and onboard **computers** have allowed fleet owners to justify the cost of the technology, which also has helped...

TEXT:
...increasingly sophisticated. It is easier than ever to cost justify fleet management technology like onboard **computers** , tracking systems, communications tools, and **computerized** fleet management programs. These systems and products--many of which fall into the market category...

...fleets the information they need to serve customers as competitively as the for-hire motor **carriers** .
... the participants in NPTC's 1995 Private Fleet Benchmarks of Quality and Productivity study use **computer** -assisted routing and scheduling programs. Of those 40%. about 809c reported reaping significant productivity benefits...

...the market. We have divided the products into three large categories: Communications, fleet management, and **onboard** , **computers** and **asset** tracking systems.
Communications
* Globalstar. The Globalstar communications system uses the latest developments in satellite and cellular telephone technologies to give users, low-cost, reliable communication to, and from any **location** in the world, according to the **company** . The system incorporates user terminals, fixed service, and a range of services for voice, data...

...data network for operational control and roaming access. Truck fleets can use Globalstar's position **location** service with one- or two-way messaging to keep track of vehicles and the shipments...

...only nationwide system that offers fleets both voice and data communications, combined with satellite vehicle **location** technology and patented dispatch software. The Series 5000 system allows the truck to receive calls...

...can send and receive data messages, place voice calls, receive proximity and actual v chicle **location** reports, manage and track loads while en route, and calculate state mileage reports. Expanded memory...

...and change information once it is entered into the system. A "return receipt" feature enables **dispatchers** to note the time their messages are received by the driver.
Also new to the...

...is en route. This new capability eliminates expensive down time

previously required for systems upgrades.

Lastly , a built-in engine performance monitoring system gathers data about the engine s operation and...

...of all communications. In addition to real-time data communications, the Omnitracs system provides vehicle **location** , driver feedback, and over-the-air engine and electronic monitoring designed to prevent breakdowns. Trailer...

...include a dispatch program that provides control over drivers and equipment: mapping software that displays **location** down to the zip code or highway junction; management tools that forward information to ...Part of a trio of new transportation and logistics planning software packages, CAPS Logistics' new **ROUTEPRO** software is designed to automate and **optimize** operational **routing** and scheduling. The software enables users to handle such tasks as service-frequency analyses. fleet sizing, route building and real-time **dispatching** . As a complement to CAPS earlier software release--TOOLKIT--this new package is designed for...

...quick implementation. The software is flexible enough to accommodate customization and future business changes.

* The **Trucking** System. TMW Systems' **Trucking** System is a dispatch operations and administrative management system for small to midsize **trucking** operations. It handles over 25 key functions such as order entry, dispatch, invoicing and driver...

...reporting, trip pre-planning, load brokerage, the ShopSuite maintenance program, and a safety management module.

Onboard computers and **asset** backing systems

* Amtech Systems' wireless systems--automatic equipment identification (AEI) and automatic equipment monitoring (AEM) systems--capture **data** to help track **assets** and monitor operations. By **tagging** equipment and then placing readers at strategic points like gates and fuel lanes, users can...

...better maintenance decisions to prevent equipment damage and improve preventative maintenance.

* Fleet Advisor. The onboard **computer** technology provided in Eaton Corp.'s Fleet Advisor serves as a comprehensive data collection, analysis ...

...fleets don't need to communicate with drivers on a real-time basis, the onboard **computer** features a built-in slot for a PCMCIA card. Fleet managers can also choose to add a printer to the onboard **computer** , allowing drivers to print route instructions or DOT logs.

In addition, the system has interface capabilities with fleet MIS **computers** for timely collection, exchange, and assimilation of logistics information.

* Fleet Chek and Fleet Find. Taking...

...at productivity, Summary Systems' Fleet Chek route audit program and Fleet find real-time vehicle **location** system identify where vehicles are, how they got there ,and how long they are staying. The onboard **computer** systems can plug into a cigarette lighter or be permanently mounted inside the vehicle. By...

...of vehicle global positions (GPS), Fleet Chek provides a post-trip route audit. It records **stops** , speeds and directional tracks in an onboard **computer** . The system also gathers data on exact arrival times, time spent at each **stop** , and verifies completed assignments. Fleet managers can use

this information to plan routes more effectively, cut down on excessive time spent at **stops** , and reduce overall route times and distances.

Using a cellular telephone link, Fleet Find gives a **company** the ability to call the vehicle's onboard **computer** at any time to learn its GPS. This capability provides for real-time monitoring of...

...system. By attaching a communicator to the trailer, users receive information on a trailer's **location** , whether or not it is moving, and how long it has been at a particular **location** .

Additional sensors can be attached to the system to alert users to potential problems--e...

...unauthorized opening or tampering.

ORBCOMM plans to increase system availability to near real-time by **mid** -1998 with the launch of additional satellites.

* XATA Corp.'s onboard **computer** system is comprehensive, providing for on-board fuel management, operation management, driver logs, inspections, and safety management. With up to 15 megabytes of onboard **computer** memory, the system includes a data station from which drivers can pick up dispatches and off-load trip data at the beginning and **end** of trips. The domicile system is IBM compatible and runs a XATA software program that...

...that links together the engine and its subsystems, the driver, and vehicle through an onboard **computer** to a **company** 's home office and remote **locations** . DataBridge utilizes several methods to facilitate data transfer, including a PCMIA card and reader and...

...and fleet managers to share time-sensitive information instantly. In addition to the 400Plus onboard **computer** , the truck also carries a modem/transceiver and an optional handset.

The products described above...

...fleet manually. Whirlpool Corp. took a big step toward the future recently by installing a **computerized** routing. scheduling, and dispatch system from the Lightstone Group in Mineola, NY. The system--called...

...allowed the manufacturer to consolidate the coordination of the field service staff from 22 different **locations** into a single hub operation in Knoxville, TN.

Before installing RIMMS. local **dispatchers** in multiple **locations** across the country managed the coordination of the service fleet through a laborious "pins and map" method. Using RIMMS. however, the **dispatchers** can put their regional market knowledge to work more efficiently by applying the software's...

...average of 10%, with mileage reductions ranging from 6% to 30% on individual delivery schedules/ **routes** . "The efficiency and **cost savings** that we've seen already don't begin to represent what this tool can do...

...to customers with RIMMS. The software allows for real-time updates, enabling Whirlpool to make **last** -minute changes to routes and schedules, thereby better accommodating customer needs. It also incorporates highly...

...the morning, same-day cancellations. rescheduling or other changes," says Mender. "We can generate an **optimized route** schedule for a technician anywhere in the US."

RELATED ARTICLE: Wal-Mart upgrades its fleet...

...private fleets such as Wal-Mart's must be able to compete with for-hire

carriers for professional drivers in the face of driver shortages and driver quality-of-life issues...

...allow the retailer's drivers to stay in both voice and data communications with their **dispatchers** . On their **end** . **dispatchers** will be able to determine when their messages were received by drivers, thereby maintaining better contact with and control over the **company** 's mobile assets.

19970800

32/3,K/31 (Item 29 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01496106 01-47094
How smart is you fleet?
Harrington, Lisa H
Transportation & Distribution v38n8 PP: 35-42 Aug 1997
ISSN: 0895-8548 JRNL CODE: HLS
WORD COUNT: 2304

shorter version of previous

...ABSTRACT: increasingly sophisticated. It is easier than ever to cost justify fleet management technology like onboard **computers** , tracking systems, communications tools and **computerized** fleet management programs. These systems and products allow companies to manage their fleet assets and ...

...fleets the information they need to serve customers as competitively as the for-hire motor **carriers** . These technologies generate major benefits in both productivity and quality for private fleets.
...TEXT: increasingly sophisticated. It is easier than ever to cost justify fleet management technology like onboard **computers** , tracking systems, communications tools, and **computerized** fleet management programs. These systems and products-many of which fall into the market category...
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...and fleet managers to share time-sensitive information instantly. In addition to the 4000Plus onboard **computer** , the truck also carries a modem/transceiver and an optional handset.

The products described above...

32/3,K/18 (Item 16 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01913932 05-64924
High tech trucking **improves fleet performance**
Harrington, Lisa H
Transportation & Distribution v40n10 PP: 53-62 Oct 1999
ISSN: 0895-8548 JRNL CODE: HLS
WORD COUNT: 2863

High tech trucking **improves fleet performance**

...DESCRIPTORS: **Trucking** ;

...ABSTRACT: the East and Midwest as Edy's and on the West coast as Dreyer's - **addressed** this challenge by being an early adopter of automated route accounting systems. Over the **last** few years the market has witnessed a virtual explosion in information technology products and systems...
...TEXT: the East and Midwest as Edy's, and on the West coast as Dreyer's- **addressed** this challenge by being an early adopter of automated route accounting systems. The **company** started using mobile computing systems in 1987, including route accounting hardware and software systems from...

...s & Edy's has updated its mobile information systems several times-responding to demands of **company** growth and the need for greater memory. For each upgrade, the ice cream maker decided...

...places the order one to three days in advance via phone line to the host **computer** , which supports warehouse distribution. Product in the warehouse is picked and confirmed, while updated information...

...the delivery agent. The delivery agent then delivers the product and does some stocking. A **third party** -the **final** merchandiser-may then enter the picture and concentrate on the product's store presentation. Sales...

...driver has enough product for the route and is generating enough to be profitable."

INTELLIGENT **TRUCKING**
Dreyer's & Edy's is just one example of how private fleets are tapping the latest technology to run their fleets efficiently and competitively. In fact, over the **last** few years the market has witnessed a virtual explosion in information technology products and systems...

...products and services. Here's a roundup of some of those products, listed alphabetically by **company** name.

ALK ASSOCIATES

ALK Associates released its entire new PC*MILER 2000 product line in...

...PC*MILER 2000 features more than 655,000 North American road miles, 276,000 accessible **locations** , 42,000 1999 five-digit US ZIP codes and 39,000 highway interchanges. It includes...

...American Mobile Satellite Corp. offers mobile messaging service that delivers instant communication between drivers and **dispatchers** . There are

two offerings from which to choose-satellite only and multi-mode.

* Both mobile messaging services offer:
* Reliable onboard information regardless of truck **location** ;

* Quick transmission of information between drivers and **dispatchers** ;

* Position reports using geographic positioning system (GPS) technology;

* Easy integration with existing transportation information systems and **computer** -aided dispatch systems.

At the heart of American Mobile's wireless data services is the...

...two-- way wireless radio data network. Wireless connectivity between radio-equipped portable terminals and host **computers** is available, through the ARDIS network, in some 430 markets.

APPIAN LOGISTICS SOFTWARE INC.

Appian Logistics Software offers Direct **Route** vehicle **routing** software used for **optimizing** **routes** , load building, scheduling deliveries, and analyzing distribution patterns. Direct Route has applications in both local...
...efficient routes possible, Appian says. Its powerful routing engine designs routes based on the customer **location** , vehicle capacity, and customer time windows. Direct Route provides detailed driving instructions, accounts for **layovers** and break times. It manages backhauls and priority shipments, one-wa routes, and factors in system.

CAPS LOGISTICS

In May, CAPS Logistics Inc., a Baan **Company** , announced release of its new **RoutePro** Replenisher product, which **optimizes** delivery **routes** for inventory replenishment. **RoutePro** Replenisher handles both planning and operational decisions required in a vendor managed inventory situation. It creates groups of customers that should be replenished together given the **location** and rate of usage. Vendors can then create the **best** set of **routes** for a particular day, given fluctuations in demand and current inventory status of their customers...

...to design master routes of customers whose inventory should be managed together, to group delivery **stops** together for efficient route structures, and more.

COMDATA
ComData offers a family of software tools...

...costs while making information management a surprisingly simple process.

ComData's portfolio includes:

* GeoFUEL 2000 **routing** and **optimization** software that helps **trucking** companies decrease costs and maximize profits. Using statistical analysis, GeoFUEL 2000 considers factors such as fuel and route costs, geographical features, and truck **stop** factors to determine **optimum** **routing** . This **information** is delivered instantly to the driver via **onboard** satellite or cellular communications.

Mail and Fax Services. Using Answer Plus, drivers have their own

personal e-mail and fax...

...stay in touch with drivers wherever they go. DRIVER Net kiosks are located at truck **stops** around the country.

DESCARTES SYSTEMS GROUP

Descartes markets a number of fleet management solutions. These...
...companies in food, beverage, transportation, field service, retail, and other industries. Applications include:

* Energy dynamic **routing** , which **optimizes** **routing** and scheduling of delivery vehicles and field service personnel. It produces optimal, least-cost routes...

...is designed for companies with dynamic routing needs. It accepts data via the Internet, generates optimized routes and quickly sends results back to the subscriber.

EATON CORP

Eaton Corp. offers rugged, easy-to-use **computers** for applications in mobile and severe conditions. Eaton offers two models of on-board **computers** (OBC)-the M 100 and M400.

The Eaton OBC is a compact and highly integrated **computer** . It monitors sensors and datalinks and processes and analyzes the information. It can interface with...

...deliver goods or services more efficiently, reducing costs and improving customer service. The program generates **dispatcher** summary reports, street-level directions, driver manifests, color maps, and more.

This release of ArcLogistics...

...fleet and communicate with trucks in a simple and reliable way. TMS' routing software plans **stop** schedules, sequencing, and routing. The program also includes a dispatch application that allows users to...

...tracking as well as messaging along different wireless communications networks across North America. OptiPlus sequences **stops** and **optimizes** truck **routes** . **Lastly** , GeoCom has produced its own digital map database containing digital road maps and has access...

...HighwayMaster's Series 5000 communications system gives users both data and voice communications, allowing the **dispatcher** to communicate with a driver without stopping the truck. The 5000 Series alerts **dispatchers** to behind-schedule trucks. This Rolling ETA option frees managers to focus on solving problems before they become service failures. With Rolling ETA, the Series 5000's onboard **microprocessor** automatically monitors a truck's progress along the route you specify. Using the truck's reported speed and cost-free GPS satellite **location** reports, the system continually calculates the truck's estimated time of arrival.

LIGHTSTONE GROUP

Lightstone...

...send in specific delivery information via the Internet as frequently as needed. It then transmits **optimized** **routes** and schedules with localized

maps and driving directions back to the user within an hour...

...operations, the software firm says. The transactional service can enhance routing efficiency, increase number of **stops** made per day, and improve customer satisfaction without large expenditures for software and training personnel.

MCLEOD SOFTWARE

McLeod Software's LoadMaster Dispatch System allows **dispatchers** to effectively move tractors and freight, without cumbersome paperwork. The software shows the most current loads and equipment **location** at a glance, which allows for more efficient planning and routing, the **company** says. Features include:

* Available loads at a glance;

* Screen to screen function provides rapid access...

...street-level routing and mapping without arduous setup and data management. Using the system, a **company** can meet service requirements such as customer time windows, truck capacities, backhauls, and DOT regulations...

...and read detailed driver instructions.

TruckStops takes into account a wide range of data about **stops** and vehicles, as well as all of the associated expenses in order to model fleet ...

...of Prophesy's FuelLogic program, a system that minimizes fuel costs and reduces out-of- **route** miles. FuelLogic.com selects the most **economical** **stops** on the **route** , while specifying the amount of fuel the driver should purchase at each particular **stop** .
Prophesy's Dispatch & Accounting software includes modules for dispatch, freight billing, accounts receivable, general ledger...

...and Accounts Payable modules for further processing.

QUALCOMM

Qualcomm offers a number of communications and **tracking** solutions that can help fleet managers **optimize** their over-the- **road** assets and personnel. For example, their QTRACS software-the communications link to Qualcomm's OmniTRACS...

...automates the dispatch function by linking vehicle information transmitted through the OmniTRACS system to the **company** 's host **computer** . OmniTRACS is an interactive information management system that includes two-way mobile communications, satellite tracking, and fleet management software.

Qualcomm's QTRACS software displays vehicle **locations** in text format, providing the number of miles to the nearest large city, nearest city...

...be grouped according to coverage need. Coverage groups can also be temporarily reassigned from one **dispatcher** to another. A system database identifies which **dispatcher** is responsible for each vehicle and automatically reroutes messages to the appropriate person.

ROADNET TECHNOLOGIES...

...route reloads, and merchandiser routing. ROADNET 5000 is part of the Roadnet Transportation Suite-an **end** -to- **end** solution that also includes TERRITORY PLANNER for strategic planning, FLEETLOADER for efficient vehicle loading, and...

...new orders on-the-fly, anticipate and react to potential service delays, dynamically reroute drivers' **stops** and more.

ROUTESMART TECHNOLOGIES

RouteSmart, from RouteSmart Technologies, is a route planning software package that...

...over streets and service customers on their routes. The software factors in geographic distribution of **stops** against a street network and other operational constraints (customer service time restrictions, vehicle capacities, one...

...and account for factors of real-world, vehicle routing logistics.

(Table Omitted)

Captioned as: WEB **ADDRESS** INFO

SABRE

Sabre markets a number of information solutions that help manage various aspects of a **company** 's transportation and supply chain management activities. These include:

OptiFlow **route** **optimization** system is an **optimization** tool that enables **shippers** to consolidate, **route** and schedule freight. The system delivers effective **origin** -to- **destination** routing solutions that reduce network costs while meeting service and operational constraints.

* OptiMatch mode optimization system helps **shippers** evaluate and process real-time load demand data and recommend whether to ship a load by private or dedicated fleet, intermodal services or an outside **carrier** .
* SureTrack shipment tracking system enables **shippers** to consolidate real-time shipment status information.

XATA CORP.

Xata Corp.'s onboard **computer** /information system integrates onboard computing, real-time communications, global positioning, and advanced fleet management software...

...of Transportation regulations.

* Capture electronic data on fuel consumption and transfer it directly to the **company** 's fuel tax processor.

Additionally, every XATA system can receive complete trip data from the **computer** 's Route **Dispatcher** subsystem. This allows for comparison between planned and actual data.

32/3,K/15 (Item 13 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01985772 49649815
What you need to know about RFID
Gould, Lawrence S
Automotive Manufacturing & Production v112n2 PP: 46-49 Feb 2000
JRNL CODE: PRD
WORD COUNT: 2099

...TEXT: readers can read multiple tags---even conventional bar codes. And RFID tags are now providing " **location** , **location** , **location** ."

FREQUENCIES AND **RFID**

The **packaging** of **mid** -range, narrow-band frequency tags (typically 12.5 kHz or 25 kHz bandwidths) has dramatically changed during the **last** couple of years. For example, flexible RFID labels from Texas Instruments (Dallas, TX) come in...

...the seat to remove the VIN label. There's no payoff in that.

In this **way** , RFID's biggest **bang** -for-the- **buck** will probably come from applications that stretch from WIP, through distribution, to the **end** customer.

One problem: 70, maybe 80, types of RFID tags exist today, says Vic Verma ...tags and then sends the tag's data over the Internet to a Savi Data **Server** . The **server** aggregates these data from all the different players in the user **company** 's supply chain. These data are consolidated and then sent back to the user **company** 's information systems (ERP, MES, or whatever) using XML protocol or simply as a display...

...racks from a supplier to the factory, and back again for reuse. The Savi Data **Server** gathers data about racks, including whether individual racks are empty or full, the rack ship...

...system from Container & Pallet Services (San Francisco, CA); and Savi's Universal Reader and Data **Server** .

CAR 54 WHERE ARE YOU?

SCM is also the reason why RFID is evolving into RTLS-real-time **location** systems. RTLS involves a number of fixed RF base stations **receiving** signals from mobile RFID tags. The moment these tags come into the wireless environment, such...
...system. Using classic triangulation, RTLS is able to locate and track the tags-and the **tagged** **items** -within +/- 10 ft.

PinPoint Corporation (Bedford, MA) sees three initial uses for RTLS in the ...

...that vehicle-- exactly. As a practical matter, the first pilots are in tagging tools and **carriers** , not the vehicles themselves. As a result, though, production wait and queue times are reduced, as well as the effort to track these **items** .

Data **Server** Architecture

Another RTLS application is to **tag** the actual manufactured **item** from the very beginning. Yes, this is already being done with thermal-jacketed RFID tags...

...For about the same cost, says Viteri, an RTLS tag can provide the OEM with **location** data. This can help, say, when vehicles are temporarily pulled out of production and put...

...log the vehicles back into the system as they come back into production. With their **location** known, the vehicles can be randomly placed in the holding area-even taken off a...

...line. However, Viteri proposes making RTLS tags a permanent part of vehicles. Now imagine a **trucker** with a **shipping** manifest of VINs to load. A wireless **computer** with RTLS can map exactly where the cars to be picked up are parked. The RTLS tags can even confirm the load against the **shipping** manifest as that truck rolls out of the lot.

Imagine now the car is sold...

...car. When the customer pulls into the service bay at a local repair shop, a **computer** reads the tag to determine exactly who the customer is, what work was done on the vehicle, what preventive maintenance needs to be done, and who to bill.

"The **original** idea of tagging the parts and tools associated with vehicle manufacturing is now evolving to...

...a tag, and operating environment.

* Determine additional and future automatic identification needs.
* Design custom-engineered **RFID** **packaging** systems adaptable to individual applications and environments, including extreme temperature, harsh chemical, and potentially volatile...

...best automatic data collection technology for each application in the enterprise, leaving the Savi Data **Server** and Universal Reader to provide the back- **end** data collection infrastructure. Together, these products gather data from multiple data collection devices, regardless of...RFID readers can be either standalone handheld devices or fixed devices controlled by a host **computer** .

32/3,K/75 (Item 73 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

00588968 92-04141
GeoRoute: A Geographic Information System for Transportation Applications
Lapalme, Guy; Rousseau, Jean-Marc; Chapleau, Suzanne; Cormier, Michel; Cossette, Pierre; Roy, Serge
Communications of the ACM v35n1 PP: 80-88 Jan 1992
ISSN: 0001-0782 JRNL CODE: ACM
WORD COUNT: 4963

...DESCRIPTORS: **Computer** graphics

...ABSTRACT: that generates maps from the database of streets and intersections, and 4. has a flexible **route optimization** system, generating **routes** that can also be graphically modified by the interactive route editor. GeoRoute has been used...
TEXT: Routing, scheduling and **dispatching** problems are among the major components of the activities related to the transportation of goods (or persons) from the point of production (pickup) to the point of delivery (**destination**). The goal is to provide the best service to the customer at minimum cost to...

...objectives are often contradictory, namely that better service is more costly, the transportation enterprise must **optimize** its resources to find an **economical way** to distribute its goods or services while maintaining the goals and constraints of its marketing...

...to 20% and even more when enterprises solely provide transportation (for example, bus service authorities, **postal services** , or couriers).

A great number of algorithms and methods have been developed for solving routing...

...route planning is the design of algorithms, but other activities are also implied: finding the **location** of the clients, computing the distance between them, evaluating their service time, managing the fleet...

...data is collected and when the objectives are well defined, an appropriate algorithm is run. **Finally** , the solutions are evaluated and quite often modified to take into account constraints that could...

...network is not in vector or bit-mapped form, but rather is based on an **original** street network data structure.

* It can handle both node-routing and arc-routing problems.

* It...

...using the interactive map editor, also part of the system.

* It has a very flexible **route optimization** system, generating **routes** that can also be graphically modified by the interactive route editor.

These features are the...

...network is stored as a series of streets, street segments and intersections. Traffic constraints are **stored** for each segment and intersection as are civic **addresses** and zone **information** . A relational

database can also be linked with the network to **store information** that describes the **items** located on the network. The GeoRoute network structure divides the area into small submaps. These...

...Network Structure

The street network is made up of the following four elements:

1) nodes **locations** where a link begins or ends

2) links connections between two nodes

3) streets sets of ordered links sharing a common identification

4) link plottings sequences of **intermediate** points describing the shape of the link.

As stated earlier, the area covered by a...

...divided into rectangular regions, each identified by a unique number. The nodes and links whose **locations** are in a given region are labeled with the region number. Using a region structure...it is possible to follow a street, link by link, from its beginning to its **end** , and know which connections are possible in the network.
For **location** -finding and routing purposes the following information is attached to links:

* the allowed directions of...

...links and easily maintained by the editor.

The data to construct a GeoRoute database can **originate** from a variety of sources. Programs have been written to extract and process information from ...

...or the mouse for graphical positioning. Quite often both modes are possible: for example, the **location** of a client can either be given by its street **address** , an intersection or by pointing with the mouse. Even if the user works with a...

...system (GIS) and operations research community. It can be related to the controversy encountered in **computer** science for the programming language editors (14) where there are advantages in using either the...

...a text editor such as Emacs (15), which was primarily directed toward dealing with textual **entities** , there are modes and commands that manipulate higher-level **entities** . This choice between the visual and structural can also be transposed in our context, but...

...confronted with this trade-off and we designed the system accordingly. Since our group was **originally** an operations research group, we knew the appropriate structures needed for the algorithms and we...

...enables us to build a whole range of applications on this network, such as shortest **path** calculations, arc-and node- **routing optimizations** , and **address locations** .

We want to give a graphic editing capability for this structure, however, this implies that...

...a structural network representation, and the next sections describe some of the currently available applications.

Route Optimization Module

There are two classes of **routing** problems **addressed** by GeoRoute: node routing and arc routing. For each, GeoRoute offers a set of general are postal box servicing, school bus **stop** pick-ups, courier services, or delivery of goods to multiple **locations** . For each **stop** , the user can define the demand size, the service time, service time windows (earliest and latest time that the **stop** may be served) and whether a U-turn is permitted at that **stop** .

GeoRoute has defined a very general framework in which almost any conceivable algorithm can be...

...approach was inspired by the Alto (11) system which is still more general because the **end** user can even design his or her own algorithms.

In GeoRoute, route generation is divided into four major steps:

1) form initial groups or clusters of **stops**

2) determine an initial sequence of **stops** within each cluster

3) exchange **stops** within each cluster

4) exchange **stops** between clusters

Steps 3 and 4 can be repeated to improve the **final** solution. For each step, GeoRoute allows the selection of one or more of several optimization ...

...be formed sequentially or by using the Fisher-Jaikumar approach (4). The initial sequence of **stops** can be determined using either nearest insertion (start with the furthest **stop** from the depot and then insert the **stop** that is the closest from any existing **stop** in the route) or a Clarke and Wright algorithm (2). **Stops** can be exchanged using either 1-OPT, 2-OPT, 3-OPT (9) or OR-OPT...

...application at hand.

Solving a node-routing problem implies computing the shortest path between each **stop** which can be precomputed and stored in a distance matrix. At first sight, this problem...

...in some cases (relay box delivery for example) there can be a large number of **stops** within a small territory, so the characteristics of the network become important (12). In addition, security constraints can require that the **stop** be serviced only on the right-hand side of the vehicle and U-turns are generally prohibited. Moreover, the movement of vehicles is limited after servicing a **stop** located at a street corner (see Figure 4) (Figure 4 omitted), and this implies that distance from **stop** x to **stop** y may depend on which **stop** z or z' has been serviced before **stop** x as shown in Figure 5 (Figure 5 omitted).

When solving a problem, most of the time is spent calculating the distance matrix and improving the **original** solution. The time required for calculating the distance matrix depends on the distance between the...

...Moreover, in most circumstances, it is sufficient to consider only the nearest neighbors. Improving the **original** solution is accomplished using **stop** exchanges. For routes totaling 100 **stops** in downtown Boston, the OR-opt algorithm takes about two hours while a 3-OPT...

...delivery for example, the cost function is in relation to the number and type of **addresses** to be serviced on the segment. This information can be estimated or calculated from data...unselected arc. This strategy is used until all arcs have been inserted into routes. The **originality** of this general heuristic is its flexibility because it is parameterized using object selection functions...

...map are chosen. For example: single or double-line streets, street width, street names, civic **addresses** , zip codes, one-way information, turn restrictions at intersections, or speed restrictions.

Results computed by our **route optimization** module (described in the previous section) can also be included on the maps. An example is vehicle routes that include the identification of the clients or the **locations** to be visited. All or only a subset of the routes defined in the region...

...to the street network. These are application-dependent and can include such items as bus **stops** , fire hydrants, postal **boxes** , or road work in progress. These **items** are normally **stored** in a **database** linked to the GeoRoute system.

The GeoRoute map production facility differs from typical cartography systems...

...are appropriately placed and postal codes are added. The lines with the arrows represent letter **carrier routes** computed by the **route optimization** module. All of this information is automatically computed from the link representation of the street...

...lakes, parks, etc.
* reshape the curves of the streets

* add new symbols (train stations, bus **stops** , airports)

* add routing information (e.g., toll bridges, weight limit on bridges)

Interactive Route Editor

The evaluation of routes computed by the module described in the section on **route optimization** is most easily done by drawing the **routes** on the map using the map generation module described in the previous section. Even with...

...be ignored or neglected or special cases will occur. An experienced person (a manager or **dispatcher**), however, can easily improve these solutions.

GeoRoute provides an interactive route editor to allow the...

...made. Commands are available to create or delete routes and to add, delete or transfer **stops** within a route. It is also possible to modify the path between two **stops** .
Experience with the System and Related Work

GeoRoute is a spinoff of many years of...

...is spent with the client to analyze the data and the solution. Quite often, the **original** network and the **location** of the clients must be adapted and the speed functions to transform distances into travel time must be calibrated before acceptable routes can be produced. Overall, **computer** solution time, even if it takes a few hours that can be done off-line...MGE Network Analysis for Intergraph, but to our knowledge, it has not been done yet.

Conclusion

GeoRoute is an integration in a microcomputer system of many years of research in the...

...Northwestern University, 1976.

11. Potvin, J.-Y., Lapalme, G., and Rousseau, J.-M. ALTO: A **computer** system for the design of vehicle routing algorithms. Comput. Oper. Res. 16, 5 (1989), 451...
...Geographical information system, mapping, routing,. transportation

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Pierre Cossette is project manager at LOGIROUTE **Computer** Systems Inc. His interests include automatic mapping, arc routing and postal applications.

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GeoRoute...

32/3,K/5 (Item 3 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

02495661 116351384
Retail logistics
Ellram, Lisa M; Londe, Bernard J La; Weber, Mary Margaret
International Journal of Physical Distribution & Logistics Management
v29n7/8 PP: 477 1999
ISSN: 0960-0035 JRNL CODE: IPD
WORD COUNT: 6228

...TEXT: inventory control and the supply chain management concept on customer service and retail logistics operations. **Finally** , it explores the manner in which retailers are incorporating and planning to implement the explosive growth in information technology to meet competitive challenges. The article **concludes** by discussing how the retail logistics trends examined here are creating some exciting opportunities and...

...as "a process for providing significant value-added benefits to the supply chain in a **cost - effective way** "[2]. Customer service includes such factors as order completeness, cycle time, consistency of performance, and...

...by the Ohio State University Logistics Research Group sponsored by Ernst & Whinney, Inc., supports this **conclusion** . Increased customer service expectations, in turn, increases pressure on the supply chain from vendors to...

...assumptions

A survey methodology was used because it was believed that this would be the **best way** to reach a wide cross-section of retailers within the USA. Before the survey was...

...a number of industry organisations. Ninety-two usable responses were received, representing 14,727 retail **locations** and 1986 annual sales of $35.1 billion. The sample encompasses a broad cross-section...

...by industry restructuring. This resulted in a high number of returned "no longer at this **address** " questionnaires and the speculation that there was a high degree of change in retail organisations...bias. This is generally accomplished by recontacting non-respondents and comparing their responses to the **original** survey responses. Another way to measure "quality" of response is to evaluate the internal consistency...

...suggested that the "quality"of the data was robust for purposes of the research questions **addressed** in the survey[4]. This approach, however, does not directly treat the question of non...

...link, the most important customer service goal is complete order fill. Complete order fill allows **stores** to be replenished on out-of-stock **items** so that they can meet consumer demand on an immediate basis.

The DC to store...

...small, makes sense given the closer proximity of the DC to store link to the **end** consumer, and the more immediate need for the product. In addition, the DC to store...

...be viewed as more important because there is generally very little inventory buffer at the **store** level. The DC must have the needed **goods** available quickly, accommodating the short planning horizon at the **store** level.

Summary

In assessing the importance of the top customer service elements to these supply...supply chain management, which takes a total pipeline perspective regarding where inventory should be held. **Finally** , reduced leadtime from vendor to DC is made possible by improved communications in the supply...

...logistics throughout the organisation. It views the logistics system as a whole, from purchasing through **final** delivery of the product to the customer. This broad framework is only possible in practice...

...A key growth area in information technology in the future is EDI, defined here as **computer** -to- **computer** transfer of information. Although the retailers responding to the survey are transmitting only 10 per...

...and their vendors in all areas, especially purchase orders, bills of lading, invoices, and advance **shipping** notices. These may all be areas of increased responsibility for the logistics function.

The direct...

...and supporting increased customer service levels. First, EDI can help to decrease cycle time, as **computer** -to- **computer** order transmittal is extremely rapid. In addition, it can improve cycle reliability if electronic purchase...
...immensely increase the accuracy and timeliness of information transferred. Information regarding price changes, stock levels, **shipping** dates, and other pertinent order data can be transmitted back from the vendor to the...

...addition, error reduction occurs. Data are handled and coded fewer times because they travel from **computer** to **computer** , rather than being manually coded and recoded.

Finally , EDI should aid in rapid error checking and correction. Many order errors will be discovered immediately because most systems will notify the **sender** if they have an invalid item code or order size. The retailer can then catch...system can perform more efficiently and effectively in getting the right product to the desired **location** when it is needed.

POS systems exist at many levels in actual practice, from electronic cash registers to fully integrated **microprocessors** . In the case of the latter, and many types in between, there may be a direct connection and information flow to the main **computer** system. In addition to providing valuable, up-to-the minute information on sales, such a...
...have POS systems are planning to increase the integration of those systems with their central **computer** . Respondents who currently have a POS system indicate that 88 per cent of their POS transactions are integrated with their central **computer** systems today. For those currently using POS and planning to use POS, this percentage will...

...of information, which in turn will contribute to generating the purchase orders for the needed **items** on a more timely and accurate basis. In addition, POS **information** allows retailers to preallocate inbound

merchandise according to actual **store** sales **data** . Thus, when a shipment arrives at a DC, it can be immediately sorted and reshipped...

...a POS terminal, it allows a barcode, which is printed by the vendor on the **package** , or **attached** by the retailer on to the price **tag** or **package** , to be optically read. The optical scanning can be done with a wand or a...

...the DC to track merchandise stock levels and movements, identify inbound and outbound shipments, generate **receiving** and **shipping** documents, and so on. Scanned information will be more accurate and timely than manually collected...
...DC level can also provide a shorter and more consistent cycle time by speeding up **receiving** , **shipping** , and **location** of goods. A shorter, more accurate cycle time is consistent with the logistics and **company** -wide goal of improving customer service and inventory velocity.

To complete the cycle which is...

...the retailer. Retail scanning of deliveries can increase the speed and accuracy of in-store **receiving** . Survey results indicate that retail scanning is insignificant today, accounting for about 15 per cent... efficient is being explored by retailers today. Scanning inbound merchandise involves working with vendors and **third parties** to standardise barcodes used[7]. Standardised barcoding will benefit all supply chain members by providing...

...scanned, only about 8 per cent of merchandise through DCs will use just vendor barcoding. **Finally** , by 1995, retailers anticipate that 64 per cent of merchandise flowing through DCs will be...

...orders can be automatically transmitted to the vendor via EDI. Coupled with preallocation of merchandise, **computerised** information transmission increases the timeliness and accuracy of information while reducing cycle time due to...

...issue of lack of integration of responsibility between functional areas within the firm must be **addressed** by top management before the benefits of a supply chain management approach can be fully...

...work with their supply chain partners to integrate their systems. Partners to be included are **carriers** , vendors, distribution centres and customers. Integration will allow them to achieve important synergies, and realise...

...to preallocate their inventories by store or distribution centre. Thus, when the shipment arrives, the **receiving location** knows exactly how to handle/sort the shipment. There is no delay in processing, or...for the effects of rapid growth in technology, particularly the explosive growth in information technology. **Finally** , supply chain management must be developed and integrated to fully exploit strategies for improved customer ...

...service, and the mutual benefits throughout the supply chain that such information sharing can provide.

Conclusion

Retailing logistics is at a very exciting turning point right now, on the brink of...

32/3,K/4 (Item 2 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

02517079 116351347
Virtual logistics: transport in the marketspace
Crowley, James A
International Journal of Physical Distribution & Logistics Management
v28n7 PP: 547-574 1998
ISSN: 0960-0035 JRNL CODE: IPD
WORD COUNT: 11144

...TEXT: to protect production against fluctuations in the supply chain caused by uncertainties; and, at the **end** of the chain, the consumer may make do with frozen or tinned food at the...

...costs);

- (2) re-routing to indirect routes (i.e. accepting higher transport costs);

- (3) changing **destinations** (i.e. substituting inferior **destination** activity);

- (4) postponing travel to off-peak times (i.e. increasing waiting/inventory times);

- (5...

...community or industry adjusts its required mobility vectors a little, in timing, cost or direction. **Ultimately** this may lead to re- **location** decisions or to variations in the pace of development of communities. It may influence the...now carried out by "keyhole surgery", with the surgeon using robot-type equipment. Will the **location** of the surgeon at the **location** of the patient always be a necessity?

The most relevant observation may be that the...

...propensity to substitute will differ by transport mode, given the known links between trip purpose, **origin - destination** distance and mode choice;

the reaction to substitution possibilities seems to be generational, i.e...

...for physical mobility or whether both are potentially part of the same "explosion" of mobility, **ultimately** synergising, leading to overall growth in both fields, and adding to rather than taking ameliorating...
...reduce or increase business travel: here, it could be that while physical mobility (air travel) **ultimately**0 may cater for a reduced market share of the total conference market, the total market...

...physical tokens had to be carried physically until the advent of the telegraph in the **mid** nineteenth century. The subsequent co-development of the railroad and the telegraph in the USA...mobility offers real possibilities for proactive responses by the transport sector, and new opportunities to **address** endemic problems. In principle, the availability of acceptable substitutes for physical mobility should lessen the...

...form of benefit, broadly defined as a service, is received by the traveller at the **destination** . This may be of a subjective nature, as in

the case of social/leisure trips...

...when we go on holidays we will be able to hire our baggage at the **destination** .

A trip/interaction category which traditionally has been given much analytical attention is the infamous...in different time zones; much commercial activity is now accomplished by telephone and over the **computer** network; and there are many negative organisational implications of the close proximity of workers in...

...tasks can be performed as well, if not better, by transferring them to a remote **location** and spending a period of time processing them in relative peace.

The term telecommuting implies...

...been extensively quoted (e.g. Judkins et al., 1985). In this experiment, motivated by the **company** 's own desire to reduce non-salary-related fixed costs, employees volunteered to set up their own homed-based limited companies, while continuing to work for the **company** on a network contract basis. Particular attention has been given to the entrepreneurial successes of...

...information processing functions (teleprocessing). This involves the replacement of workers who previously were located at **company** headquarters and engaged in the "back office" processing of information or customer enquiries by telephone with a new group of workers at a distant "satellite" **location** .

For the employer, the advantages are mainly labour-related. ...trade-off between reduced commuting at the headquarter city and additional commuting at the satellite **location** . The trade-off may take place in different cities and countries. In the current trend...

...a tendency to place facilities not in city centres but in outer-suburban and rural **locations** where there are lesser transport implications. Thus the outsourced workers telecommute both in terms of...also by the reality that many existing infrastructure systems and networks are coming to the **end** of their technical life cycles and becoming obsolete. Their reconstruction will be costly; especially if...

...adding activity extending "vertically", from the basic extraction and processing of raw materials to the **final** distribution and sale of products at retail outlets (Hines, 1993). Firms along the chain, regardless ...

...the goods and the quality of the service with which they are delivered to the **end** customer. In this business environment the traditional boundaries between manufactured produce and services have become blurred, and many hybrid products (well known examples include **computer** software, instantly developing photographic film, fast food outlets, auto-diagnosis health devices) have emerged.
As...

...through telecommunications, and use home delivery services to bypass conventional retail outlets (Business Week, 1993b). **Ultimately** shops may become less central in commerce, as direct distribution from electronically-triggered warehouses grows...

...to organise new types of distribution service focused not as traditionally on the producer as **origin** , with multi-drop **destinations** , but on the consumer as **destination** , with multi-pickup **origins** ("Just for You", or "J4U", distribution (Figure 4)). Late changes in orders or in **destinations** will be accommodated via a telecommunications link with the freight train or delivery van, and by the use of product finishing facilities which will be not at the **factory** but **on board** the vehicle (e.g. **final** assembly, sorting, printing, labelling, **packaging**). Principles of value-adding distribution have always been applied within the transport sector (...on trains), but the full potential of the delivery vehicle given the capability of onboard **computers** and of miniaturised manufacturing equipment has yet to be realised.

The more accurate knowledge of...
...customer needs in place, time and design specifications, and deliver the completed product in a **way** which meet these needs creatively and **economically** .

Helping this process will be an increased use of artificial intelligence in the logistics function...

...and co-ordination in the form of "intelligent" vehicles and road infrastructure, there will be **onboard** intelligence in **freight** consignments, in the form of embedded **information** and scannable codes.

Alt et al. (1996) observe the evolution of what they term transport...

...to consumer trends (OECD, 1992). The freight firm will play an increased role in the **final** stages of production, helping to provide flexibility of **destination** choice, delivery timings and product presentation (i.e. value adding distribution). All this will be...

...as hitherto, it would be useful to identify the core purpose and characteristics of the **goods** as seen by the consumer, their required delivery characteristics, and their embedded **information content** including **accompanying** services (which could have passenger transport implications).

It is said that today every business competes...

...case their output may be mainly information. In the case of some products, for example **computer** software, the ratio of physical to electronic transport may change over time to the point...

...of catering for their physical freight flows may be less that of ensuring the required **origin - destination** speed as that of coping with rapidly-varying **origins** and **destinations** (Business Week, 1993a).

In responding to these developments the transport firm is faced with a...

...the advantage of permitting the full picture of the firm's mobility requirements to be **addressed** . However, it could be argued, this role may be beyond the scope and competence of...

...have commercial value and permit the offering of products in the marketspace.

For instance the **computerised** reservation systems (CRS) which have been developed and used by the larger airlines to co...through a widening of the appraisal scenario in both time and space. In principle, the **computer** can

pre-store arrays of contingencies for a myriad possible events, and instantly provide the...

...with the new transport requirements of the virtual world.

In freight transport, for instance, the **shipper** may require real-time space booking facilities, automatic monitoring of consignment status, and automatic delivery...

...be part of the distribution task: for example, the programming of computing devices at their **final destinations** , the printing of newspapers at their delivery points, or the cooking of hot meals for...

...berths, for example. The construction of these elements in the wrong shape, at the wrong **locationor** at the wrong time has always been associated with problems ofearly obsolescence and financial loss between routes;

the provision of **onboard** value-adding facilities (such as **information** processing support for passengers, product processing/finishing facilities for **freight**) is likely to enhance the flexibility of every transport mode;

all transport modes must plan...

...likely to become smaller; routes and schedules will be more fluid; and the provision of **onboard** electronic communications for passengers will be paramount;

in urban **freight** distribution, the emphasis will swing from single-**origin** -multidrop towards multiorigin-single-drop as electronic shopping from retail warehouses becomes prevalent; the vans used for delivery will be "intelligent", i.e. provide for controlled refrigeration of perishable **goods** , controlled heating of pre-cooked meals, **onboard** printing of labels, etc.;

as concern for the conservation of natural resources continues, industry will...

...of electric road vehicles will become commercially viable; new road infrastructure concepts may emerge to **address** battery re-charging requirements and new speed-flow characteristics.
In the light of these, and...

...network elements, recognising that nodes (platforms) may require to be adjustable in capacity (scaleable) and **location** (footloose) and that traffic will be interchangeable between physical (marketplace) and virtual (marketspace) modalities;

more...

...has encountered at various times in the past, and that transport has always succeeded in **addressing** and accommodating such changes and will continue to do so. In the long run, it...

...has had positive impacts and negative ones, such as the decline in traffic at various **stop - over** airports, but the advances were great.

The Cross-Channel Tunnel and Scanlink projects, daring and difficulties in management and co-ordination.

A difficulty in **addressing** the potential impact of telecommunications on transport is that its impact is so invisible, diffuse and difficult to quantify. Nobody will deny the impact that **computerised** reservation systems have had on airline market shares, or the impact which the fax has ...

...buyer affiliations), and its mix of work (employment) categories including product/retail categories.

As an **originator** of interactions, each zone would generate a set of desired social interactions, desired information-rich...

...or a desired balances between physical and electronic shopping, and between multi-drop and multi- **origin** distribution in effecting deliveries.

Interactions between a given {zone i} as **originator** and the other {zones j} as attractors would be distributed according to the available infrastructure...had over-riding value chain preferences (such as where multinational firms pre-specify their supplier **locations** or where a teleprocessing facility has a specific country or firm affiliation) this could be...

...and various policy scenarios embracing transport, telecommunications and/or various aspects of social organisation.

9. **Conclusion**

As we contemplate the twenty-first century, there seems little doubt that information and communications...

...have occurred through the medium of printed paper, which would have been transported from the **location** of generation of the data to the **location** of analysis. In the case of a direct substitution, there is a loss of traffic...

...The transport market will be part of the mobility picture and difficult to predict and **address** in the absence of the full picture.

Those in transport also have the option of...

...Transport on the Environment: A Community Strategy for Sustainable Mobility, Green Paper, COM (92) 46 **final** , Commission of the European Communities, Brussels.

13. CEC (1996), The Citizen's Network: Fulfilling the...

...Efficiency in Europe, Research Programme of DG XIII of the Commission of the European Communities, **Final** Report, Brussels.

19. ECMT (1993), "Transport growth in question", Proceeding of the 12th International Symposium...

32/3,K/52 (Item 50 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

00872782 95-22174
Warehouse management: The critical application of the 1990's
Warrender, Roger
Industrial Engineering v26n6 PP: 25-27 Jun 1994
ISSN: 0019-8234 JRNL CODE: INE
WORD COUNT: 2344

...ABSTRACT: use of the available storage space in the warehouse. Warehouse management will assist in the **receiving** and put-away process and, at the same time, will allow for the capture of...

...The warehouse management system continues to work right through the staging and handling of outbound **freight** and can analyze potential cost **savings** . In most instances, in attempting to implement some of the cost saving disciplines of a warehouse management system, service to the customer also improves. The **ultimate** goal of the system is to streamline the process from order inception to order delivery...
...TEXT: compete in the age of just-in-time, total quality management, and electronic data interchange, **mid** -and small-size companies must step up to the issue of warehouse management. Gaining control...

...the warehouse, it will affect and interface with most aspects and systems within the distribution **company** .

A distributor can choose to be proactive about the implementation of a warehouse management system...

...be accomplished and how it can be achieved. All the technologies -- the equipment, hardware and **computer** software, are available for implementation of a warehouse management system, and they are available today...

...flow of goods in and out of the warehouse.

Warehouse management will assist in the **receiving** and putaway process and at the same time will allow for the capture of data...

...The warehouse management system continues to work right through the staging and handling of outbound **freight** , and can analyze potential cost **savings** . Coupled with an inventory management and planning system, more productive methods of purchasing, transferring and...

...system automatically recognizes and releases back-ordered items, service to the customer is improved. The **ultimate** goal of the system is to streamline the process from order inception to order delivery...

...management systems is the ability to utilize random slotting. In the traditional warehouse layout, specific **items** are **assigned** permanent **locations** around the facility. This technique leads to an under-utilization of warehouse space, the typical fixed **location** warehouse being 50 percent to 65 percent full. Random slotting provides for the assignment of a greater number of small storage **locations** throughout the warehouse, with no **items** specifically **assigned** a permanent home. This approach not only provides for improved space usage within the warehouse...

...row, aisle level and bin racking systems, warehouse management allows the designation of additional warehouse **locations** to support advanced warehouse techniques.

The warehouse management system will also support configuration of areas... ...customer orders have been received, warehouse management will direct the goods to a back order **staging area** .

RECEIVING MERCHANDISE

As shipments from suppliers arrive at the **receiving** dock, warehouse management is used to perform the pre- **receiving** , putaway and **receiving** process. Pre- **receiving** is initiated by accessing an advance **shipping** notification, or a purchase order to confirm and match what has physically arrived at the dock. The warehouse management system will analyze the **items** received and the **locations** available and automatically assign optimum **locations** throughout the warehouse. This **assignment** is performed based on a set of user-defined rules and profile **information stored** in the **item** master and **location** Master **files** . **Item information** includes multiple units of measure, dimensions, weight, case quantities and special storage requirements (frozen **goods**). **Location** data uses dimensions as well as a number of other sequencing and selection criteria. Data...

...on a radio frequency (RF) terminal, to put items away. Putaway is sequenced in the **optimum** travel **path** through the warehouse and faster moving items are automatically directed to better shelf **locations** . As each putaway is completed the **receiving** information is forwarded to the warehouse management system, and the goods are immediately available for...

...of available information, the system can direct the putaway of goods to a back order **staging area** , a cross dock area, a returned goods' area, a locked storage area, or a quality search the warehouse to find out information such as what **locations** are available, where do I already have some of this item or does this item...

...support getting the goods off the shelf and to the customer, just as they support **receiving** the product. On the basis of the layout of the warehouse, and the number of...

...to determine if and where the goods are available, the appropriate pick method and the **best** possible **route** . Frequently some level of expert system logic is used to perform this automatic selection and sequencing. The system will maintain FIFO integrity and automatically assign the best picking **location** based on quantity.

Although the basic process of picking per customer order is certainly supported...
...item is summarized on to one summary list, and the picker is sent to the **location** once. The picker returns to a shipment staging/consolidating area, and the goods are split...

...advanced warehouse technique involves the selection and tracking of boxes or cartons through the picking/ **shipping** process. Since extensive information is available concerning the physical characteristics of items the system is...

...determine the appropriate box to use to pack the order. Special packaging requirements can be **addressed** , as well as the automatic splitting of large orders into multiple boxes. Once the **box** is filled, a

bar-coded tracking label can be **attached** and used to confirm shipment of the order. The label can also be used as a carton number and electronically transmitted to the customer in the form of an advanced **shipping** notification. The box number identifies the contents and weight of the shipment.

MOVING AND COUNTING INVENTORY

Warehouse management systems must also support the enhánced tracking of inventory and **location** use. As **locations** within the random warehouse become fragmented, the system should suggest movement of product from one **location** to another based on consolidation rules, or to optimize the **location** for items that have exhibited sudden increases or decreases in demand. Movements from bulk and case **locations** to forward, item pick **locations** will be automatically recommended by warehouse management.

One of the **final** areas of assistance provided by the warehouse management system is in the area of cycle...that the implementation of a warehouse management system is not just an installation of a **computer** system or some **computer** software. Decisions must be made on the physical layout of the warehouse, the types of...

...key people in the implementation of the new system are the busiest people in the **company** . Management must provide a means for those personnel to devote sufficient time to the project...

...customer service of the full integrated, operational warehouse management system cannot be denied. If our **company** is not already moving forward with such a system, it is certainly time to begin...

32/3,K/1 (Item 1 from file: 9)
DIALOG(R)File 9:Business & Industry(R)

02098055 Supplier Number: 25603607 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Wireless Data: Unseen, Yet Orange Is Color
(According to Cahners In-Stat Group, there will be nearly 9 mil wireless data users within the enterprise segment in 2003, up from 784,000 in 1999)
Wireless Week, v 6, n 8, p 24
February 21, 2000
DOCUMENT TYPE: Journal ISSN: 1085-0473 (United States)
LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 1317

(USE FORMAT 7 OR 9 FOR FULLTEXT)

ABSTRACT:
...users within the enterprise segment in the year 2003, up from 784,000 in 1999. **Trucking** companies such as Schneider National Inc (Green Bay, WI) dominate the wireless data market. Schneider...

...fleet of 15,000 tractors using the OmniTRACS satellite-based two-way communications system. The **company** is currently using services from Orbcomm Global LP to connect its 43,000 trailers. Orbcomm...
...Tracking Solutions technology will enable Schneider to track the status of its trailers including their **location** , whether they are connected or disconnected and whether they are full or empty. Schneider had...

TEXT:
...be orange. That's because those big orange rigs many North Americans see on the **highways** may be the **best** -connected mobile equipment around. The rigs, which belong to the nation's largest motor **carrier** , Schneider National Inc., could serve on posters for the wireless Internet.

Though media attention focuses...

...wireless Internet, the market still is dominated by companies like Schneider. The Green Bay, Wis., 1company and others like it logged onto wireless data years ago and still represent the biggest...
...Cahners In-Stat analyst.

Schneider provides an example of how the market is changing. The **company** , which had consolidated revenues in excess of $2.7 billion in 1998, has a **trucking** fleet that includes 43,000 trailers and 15,000 tractors.

The **company** became a wireless data pioneer in 1988 when it contracted with the OmniTRACS division of Qualcomm to set up improved communications between Schneider's **dispatchers** and the **company** 's truck drivers. Schneider was one of the first **trucking** companies to use OmniTRACS--which started service the same year--and recently renewed its contract...

...effective than the public switched telephone network, having our drivers standing in queues at truck **stops** waiting for a phone, calling the **dispatcher** and maybe being put on hold. That was non-productive time. We wanted the ability...

...The system has worked so well for Schneider that it still has some of the **original** units in its trucks.

Mueller says the system has evolved over time, especially in refining...
...with the fleet management software," Mueller says. "They had a great network in terms of **sending** and **receiving** messages via satellite but the key then, and I believe it is still true today...

...the mile to haul freight," Mueller points out. "If they are sitting in a track **stop** trying to communicate with a **dispatcher** on the phone they aren't being paid."

Schneider didn't **stop** after it put wireless into its tractors. Now it's doing the same thing for...

...s commercial low-Earth orbit satellite network and its Vantage Tracking Solutions unit.

Over the **last** two years, Schneider has been testing Vantage communications and sensor technology in trailers and is...

...or disconnected from a tractor, if it is loaded or empty, as well as its **location** and a number of other status reports. The data is collected and transmitted so it...

...power in the trailer, it can be hauled on a rail car or pulled by **third - party** equipment," Mueller says. "We also manage large trailer pools for our customers. Knowing where those...

...to how effectively we manage the fleet."

Included in the Vantage system is an ultrasonic **cargo** monitor mounted inside the trailer, which senses when there is **cargo on board** . That and the other **data** are collected and then transmitted with a battery-powered radio to Schneider's **dispatchers** . This information is especially valuable in managing the trailer pool because the sooner Schneider knows...

...EtherPage set up by MobileSys Inc. of Mountain View, Calif.

The EtherPage software uses a **company** 's own enterprise systems to deliver messages to and from wireless devices such as pagers, digital phones and personal digital assistants.

Enron, a global energy **company** , uses the system in its payroll department during the crunch of payroll distribution for its...

...Motorola pagers, has a Web interface so that pages can be sent from an Enron **computer** .

Scott Walters, an IT consultant for 100-year-old manufacturer Mack Trucks, says the **company** started using the MobileSys system about two years ago to alert the Mack Unix group...

...INDUSTRY NAMES: **Trucking**
PRODUCT NAMES: **Trucking** (long distance and over-the-road) (421334...
CONCEPT TERMS: All **company** ;

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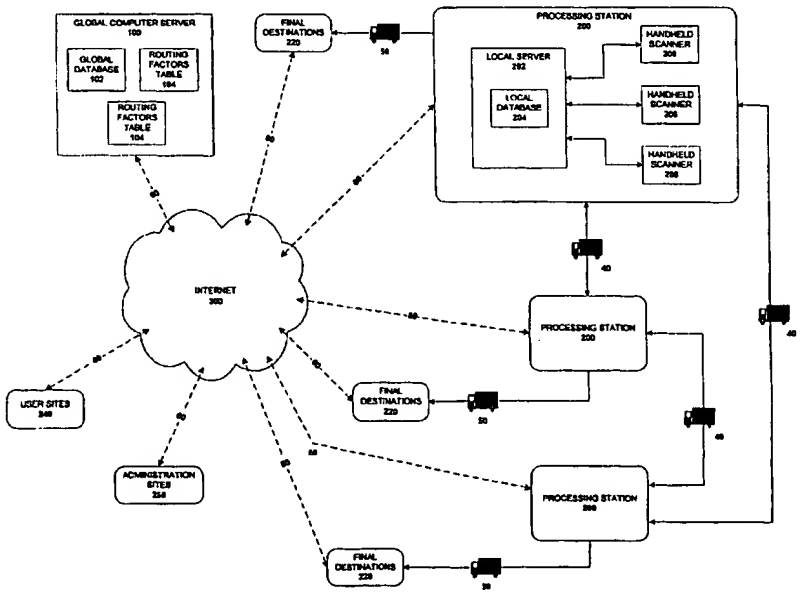
(54) Title: CENTRALIZED SYSTEM AND METHOD FOR OPTIMALLY ROUTING AND TRACKING ARTICLES



(57) Abstract: A computer-implemented centralized article routing and tracking system and method for optimally routing an article through a network of processing stations. The system and method generate an optimal route based on variable factors such as weather, traffic, and available equipment and can re-calculate said route at every stop based on updated information. The system and method permits tracking of an article regardless of whether the article has been consolidated with other articles or not.

WO 02/19046 A1

48/5,K/12 (Item 12 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00884953 **Image available**
CENTRALIZED SYSTEM AND METHOD FOR OPTIMALLY ROUTING AND TRACKING ARTICLES
SYSTEME ET PROCEDE CENTRALISES DESTINES A ACHEMINER ET A SUIVRE DES ARTICLES DE MANIERE OPTIMALE

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Priority Application: WO 2000US24225 20000831
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AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
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Detailed Description
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Fulltext Word Count: 6554

English Abstract
A **computer** -implemented **centralized** article routing and tracking system and method for optimally routing an article through a network of processing stations. The system and method generate an optimal route based on variable factors such as weather, traffic, and available equipment and can re-calculate said route at every stop based on updated information. The system and method permits tracking of an article

regardless of whether the article has been consolidated with other articles or not.

French Abstract

L'invention concerne un systeme centralise d'acheminement et de suivi d'un article, mis en oeuvre par ordinateur, ainsi qu'un procede destine a acheminer un article, de maniere optimale, au moyen d'un reseau de stations de traitement. Le systeme et le procede generent un itineraire optimal fonde sur des facteurs variables tels que le temps, la circulation, et un equipement disponible, permettant de recalculer ledit itineraire a chaque arret en fonction d'informations reactualisees. Ce systeme et ce procede permettent de suivre un article, que ce dernier ait ete groupe avec d'autres articles ou non.

Legal Status (Type, Date, Text)
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International Patent Class: **G06F-017/60**

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Detailed Description
Claims

English Abstract

A **computer** -implemented **centralized** article routing and tracking system and method for optimally routing an article through a network...

Detailed Description

... INVENTION

The present invention relates generally to article processing and delivery, and specifically to a **computer** -implemented method and system for optimally routing an article through a network of processing, delivery...

...shipment routings to suit their convenience. It is also desirable to minimize delivery times by **optimizing** article delivery **routes** interactively and in real time based on timely updated fast-changing conditions such as traffic...

...microradio link. This system is limited in that it only provides tracking capabilities and no **routing** , re- **routing** , **optimization** or consolidation features.

The '908 patent describes a system for monitoring the delivery of mail...

...stop along said route. The ID and corresponding schedule is stored in a central database **maintained** in a **computer** which is capable of querying local **computers** at each delivery stop. Upon arrival at each stop along its prescribed route, a mail...

...and date is entered into a local database maintained in said local computers. Periodically, the **central** **computer** queries all local stations for presence of a particular item. If an item fails to...on an item-level basis for mail pieces grouped together for delivery to a common **address** . **Finally** , this system only allows for changes to the

route of a mail piece when an alarm is triggered and does not permit changes to the **final destination** of the mail piece. Therefore this system does not provide complete control over delivery of items within it nor does it **optimize** the delivery **route** .

The '264 patent describes a method for automatically generating and transmitting e-mail messages to...

...over delivery of items within it nor their delivery routes.

The '216 patent describes a **computer - controlled** conveying system for use in transporting materials between different locations. The system includes a plurality...

...adjustment to compensate for variable conditions. In addition, routing in this system cannot be 5 ' **optimized** and the system cannot **track** articles on an item-level basis but only on the basis of an entire carriage...

...to transport the timber. The memory devices may be read and written to by a **computer** through a field terminal device. Through a field terminal device, a forester transmits all information...

...timber, the data from the data device is read and recorded on a local personal **computer** and a new record is written to the **data** device which may contain new **information** which can be used to ensure that the timber is routed to the correct location...

...device and to generate reports from such information. This method is limited in that the **computers** at the different transit locations are not networked andthe reports and logs generated by each **computer** must be manually transmitted via diskettes or e-mailed in order to fully integrate all...

...fact" control than a real-time tracking tool.

Moreover, this system does not include any **routing** features, **optimized** or otherwise, as it is completely decentralized and all routing decisions are made prior to...

...a system for routing an
article through a process delivery network which pennits repeated re-**optimization** of a delivery **route** based on constantly updated conditions, complete **control** over the delivery date, time and location of the article, consolidation and de-consolidation of...

...the art for a more flexible, powerful and efficient system and method of routing and **tracking** articles by calculating an **optimized** delivery **route** using timely information regarding available equipment, available warehouse or storage space, a desired delivery date, traffic delays, weather, and other variables, and re- **optimizing** the **route** based on updated conditions after each stop along the delivery network.

There is a further...

...for routing articles which permits consolidation of articles from multiple origination points and a common **destination address** , or,

conversely, de-consolidation of articles from a single origination point and multiple **destination addresses** , while retaining the ability to track articles individually or as part of the consolidated unit...

...while in transit or processing and manually change their routing, specify required stops, alter their **final destination** , and otherwise control delivery of said articles prior to arrival at their final **destinations** .

Finally , there is a yet a need in the art for a system and method for ...

...an optimal routing to the correct destination without requiring the article to "backtrack" to the **last** correct **stop** .

SUMMARY OF THE INVENTION

The present invention solves significant problems in the art by providing a **computer** -implemented system and method for routing a articles through a delivery network which permits repeated re- **optimization** of delivery **routes** based on timely updated conditions, complete **control** over the delivery dates, times and locations of the articles, consolidation and de-consolidation of...

...easily accessible by all parties interested in the status of the articles.

Generally described, the **computer** -implemented **centralized** system for optimally routing and tracking articles comprises a global **computer server** accessible through an electronic communications network, the global **server** comprising: a global database containing a record of routing and tracking information for each article...

...article handled by the system and for updating the global database with changes to the **routing** and tracking information; a database of route optimization factors accessible by the **optimizer** for use in the calculation and recalculation of the optimal route; a tracker enabling users of the system to review the tracking and routing information and to modify the **route optimization** factor database; a plurality of processing stations arrayed throughout a delivery area for the system; at each such processing station, a local **computer server** capable of periodically receiving from the global **computer server** identification, handling and routing instructions for each article to be processed at the processing station and periodically transmitting to the global **computer server** information regarding all handling activities performed on articles processed at the processing station; at each such processing station, one or more handheld scanning devices capable of receiving from the local **computer server** article identification information, handling instructions and routing information, and also being capable of collecting identification...

...each the processing station and transmitting the identification and handling activity information to the local **computer server** ; and transportation means capable of transporting articles between and aniong the processing stations, article **origination** points and article **destination** points.

Generally described, the **computer** -implemented method for delivering

packages through a **centrally** optimized **tracking** and **routing** system of the present invention comprises the steps of, receiving a package at one of...

...arrayed throughout a delivery area, using a first handheld scanner to collect package identification and **final destination** data from said package, transmitting said package identification and **final destination** data along with scanning time and date data to a local **computer server** , periodically uploading said identification, time, date and **final destination** data, along with processing station identification data to a global computer server at a **centralized** location, at said global computer **server** , incorporating the uploaded inforniation into a global database, calculating an optimal route along the several processing stations for said package based on its current location, **final destination** and several variable factors, determining whether said optimal route requires the package to be transported to a next processing station or directly to its **final destination** , updating the record for said package in said global database with said identification information for said next processing station or **final destination** , downloading said package record information to the local **computer server** at the processing station where the package is located, transmitting said downloaded package record to...

...said processing station, scanning said package to obtain identification information, displaying the next station or **final destination** identification information for said package, placing the package inside transportation means, such as a truck, and transporting the package to said next processing station or **final destination** , if the package is transported to a next processing station, repeating the above steps until the package is delivered at its final **destination** , once the package is transported to its **final destination** , scanning said package with said first or second handheld scanners or a third handheld scanner...

...last processing station which processed the package, and uploading said delivery information to said global **computer server** .

Accordingly, it is an object of the present invention to provide a more flexible, powerful and efficient system and method of routing and **tracking** articles by calculating an **optimized** delivery **route** using timely information regarding available equipment, available warehouse capacity, a desired delivery date, traffic delays, weather, and other variables, and re- **optimizing** the **route** based on updated conditions after each stop along the delivery network.

It is a further...

...for routing articles which permits consolidation of articles from multiple origination points and a common **destination address** , or, conversely, de-consolidation of articles from a single origination point and multiple **destination addresses** , while retaining the ability to track articles individually or as part of the consolidated unit...

...identify articles while in transit and manually change their routing, specify required stops, alter their **final destination** , and otherwise control delivery of said articles prior to arrival at their **final destinations** .

It is a firrther object of the present invention to provide a system and

method...

...optimal routing to the correct destination without 3o requiring the article to "backtrack" to the **last** correct **stop** .

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These and other objects, features and advantages of the present invention may be...

...of the centralized package routing and 'tracking system of the present invention include a global **computer server** 100 containing a global database 102 of routing and tracking information for articles handled by ...

...routing factors table 104 containing information used by the global computer server 100 to create **optimized** routing instructions, and an **optimization** rules table 106 which contains information regarding how optimization factors are applied to each article. The global **computer server** 100 is connected to other components in the system via a communications link 60 to...

...electronic communications network, such as the Internet 300. The electronic link 60 between the global **computer server** 100, as well as other components in the system, and the Internet 300 may consist...

...geographic area covered by the system. Each processing station 200 is equipped with a local **server** 202 which in turn contains a local database 204 for temporary storage of routing and tracking information received from, and transmitted to, the global **computer server** 100. Connected to the local **server** 202 at each processing station 200 are one or more handheld scanners 206 which are...

...from articles processed by the system, to retrieve routing and tracking information from the local **server** 202, and to transmit tracking and routing information to the local **server** 202 for later transmission to the global **server** 100. The connection between the handheld scanners 206 and the local **server** need not be permanent and may be achieved by using physical connections, such as cables...

...frequency (RF) or infrared (IR) transmission. The processing station 200 is connected to the global **computer server** 100 system via a communications link 60 to an electronic communications network, such as the...

...may also be connected via one or more physical transportation route 50 to a final **destination** 220 for **final** delivery of articles.

Authorized users of the system may access, and interact with, the global database 102 by connecting to the global **computer server** 100 through the Internet 300 via a communications link 60 from either a user site 240, a **final destination** 220 or a processing station 200. A system administrator may access, and interact with, the...

...to the routing factors table 104 based on new conditions, by connecting to the global **computer server** 100 through the Internet 300 via a communications link 60 from either an administrator site...

...to the processing station or upon receipt at said processing station, an identification number and **final destination** is incorporated into the article either by the sender or by personnel at the processing station. In step 2, the identification number and **final destination** on the article are read and recorded using a handheld scanner and, subsequently, in step 3, the handheld scanner is synchronized with the local **server** at the processing station. Upon synchronization, the article's information is transferred from the handheld scanner to the local **server** . Similarly, during synchronization, any new information in the local **server** about articles in process or to be processed by the processing station is transferred to the handheld scanner. In step 4, after the handheld scanner is synchronized, the local **server** similarly synchronizes itself with the global **computer server** by transferring to the global **server** all new information about all articles, including the subject article, received or handled by the processing station. Upon synchronization, the global **computer server** looks up the record for the article using its identification number and if no record...

...record is created for the article in the global database.

In step 4, the global **computer server** also transfers to the local **server** any new informatiori from the global database about packages to be processed at the subject...

...algorithm which makes use variables from the route factors table and the routing rules table **stored** at the global server. The optimization rules for new articles are set in a default...
...article.

After an optimized route is calculated, the subject article's record in the global **database** is updated with the identifier for the next processing station along the optimal **route** , or, if applicable based on the optimal **route** , with the **final destination** .

In step 6, the global **computer server** and local **server** are again synchronized and in step 7 a handheld scanner at the processing station is synchronized with the local **server** . In step 8, the next time the article is scanned by a handheld scanner at...

...13, the handheld scanners involved in handling of the article are synchronized with the local **server** and the local **server** is synchronized with the global **computer server** . At the global **computer server** , the record for the article in question is updated with the new handling infortnation and...

...that processing station, steps I to 13 are repeated until the next stop in the **optimized route** for the article is its **final destination** . If an article is en-route to its **final destination** after step I 1, in step 15, upon arrival at the **final destination** , the article is scanned using a handheld scanner and delivery information is recorded in the...

...to the processing station, in step 16 the handheld scanner is synchronized with the local **server** . Finally, in step 17, the local **server** is synchronized with the global **computer server** which incorporates all new handling and delivery information and closes the global database record for...

...unload time at processing stations, traffic conditions, and weather. Values for variables which represent the **routing optimization** factors are **maintained** in a separate database which is updated as conditions change and is accessible to the global **computer server** every time it calculates and re-calculates an optimal route for any given article in...

...database of routing variables and if any changes have occurred since the most recent route **optimization** , a new optimal **route** is calculated for the article. In this fashion, the system allows for automatic route adjustments...

...basic identifier is an article tracking number which is incorporated on the article in a **computer** readable format, such as a bar code, and is unique to the article. A second...as a consolidated group of articles which has a conu-non attribute such as its **origination** point, its **destination** point or its composition. Containers can themselves be included or "nested" within other containers or...

...identifier should be associated with the article. When this information is received by the global **computer server** , the container's identifier is added to the global database record for the article.

Any...

...removed identifier.

In the preferred embodiment, all routing activities are centralized in the global computer **server** which, in turi4 may be accessed and manipulated through an electronic connnunications network such as the Internet. In the preferred embodiment, an authorized user accesses the System from a personal **computer** through a standard Internet browser and enters the tracking number or customer identifier for the...

...stop along with an estimated time and date of delivery based on the most recent **optimized routing** . Using the browser, the user is then be able to modify routing options for each...

...of articles. The routing options may include, without limitation, canceling shipments in transit, changing the **final destination** of an article or articles, changing **routing optimization** variables by assigning more or less weight to factors such as average speed between processing...

...or de-consolidation of shipments, and requesting that a particular route be used regardless of **optimization** considerations. Any custom **routing** options entered by the user are then translated into a set of routing rules for...

...global database article records. At the next stop in each article's route, the global **server** will query the routing rules and take them into account when re-calculating the optimal...

...for each article. If no custom routing option's are specified by the user, the **optimized route** is re-calculated using a predetermined set of default routing rules.

In a preferred embodiment...

...to an erroneous processing station and can take corrective action by generating a new optimized **route** for the article from said erroneous processing station, Since the local **computer server** at the processing station downloads identification information from the global **computer server** about every article scheduled to arrive at said processing station, upon arrival an scanning of...

...the handheld scanner, which has in turn downloaded the scheduled article information from the local **computer server** , will alert the operator that the article has been sent to the processing station in...

...or, alternatively, proceed to route the article normally from the present routing station to its **final destination** .

It will be understood by those skilled in the relevant art that while the preferred...

...by those skilled in the relevant art that while the preferred embodiment refers to a **computer** environinent which includes a single global **computer server** and a single local **server** at each processing station, alternative embodiments of the invention may include multiple global **computer servers** and multiple local **servers** at each processing station which alone or in combination perform essentially the same function as that of the global **computer server** and the local **servers** of the preferred embodiment.

Accordingly, it will be understood that the preferred embodiment of the ...

Claim

1 A **computer** -implemented **centralized** system for optimally routing and tracking articles comprising:
a global **computer server** accessible through an electronic communications
network, said global **server** comprising: a global database containing a record of routing and tracking information for each article...

...by said system
and for updating said global database with changes to said routing and **tracking** information; a database of **route optimization** factors accessible by said optirnizer for use in said calculation and re calculation of said...

...users of said
system to review said tracking and routing information and to modify said **route optimization** factor database,
a plurality of processing stations arrayed throughout a delivery area for said system,
at each such processing station, a local **computer server** capable of periodically receiving from said global **computer server** identification,
handling and routing instructions for each article to be processed at said processing station and periodically transmitting to said global **computer server** infortnation regarding all handling activities performed on articles processed at said processing station,
at each such processing station, one or more scanning devices capable of

receiving from said local **computer server** article identification inforination, handling instructions and routing inforination, and also being capable of collecting identification...

...each said processing station
and transmitting said identification and handling activity information to said local **computer server** , and
transportation means capable of transporting articles between and among said processing stations, article **origination** points and article **destination** points.

2 A computer-implemented method for delivering an article using a centrally
optimized **tracking** and **routing** system, the method comprising the steps
of
at a first processing station, using a first scanner to collect article identification data and **final destination** data from said article,
transmitting from said first scanner to a local **computer server** at said first processing station, said article identification data and **final destination**
data along with scanning time and date data,
transmitting from said first processing station to a global **computer server** said article identification, time, date and **final destination** data, along
with identification data for said first processing station,
at said global **computer server** , incorporating said data transmitted from
said first processing station into an article record at a...

...calculating an optimal route for transporting said article from said first
processing stations to said **final destination** and updating said article
record with identification information for the first stop along said optimal route,
transmitting from said global **computer server** to said local **computer server** said updated package record information,
transmitting said package record information to said first scanner or...

...first processing station to said first
stopq
if said first stop is not also said **final destination** , repeating the above steps
at said next stop until said package is delivered at said **final destination** .